

# BYZANTINE MUSIC FORMULAE

## *First Mode - Heirmologic*

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Key:

1 = accented syllable

0 = unaccented syllable

X = syllable that may be either  
accented or unaccented

Variations of the same formula  
are indicated in color

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\* The Byzantine music formulae herein were extracted from heirmologic melodies found in the *Zoe Anastasimatarion* (14th edition, 2002).

**A) Medial Cadences on Di**

Accented on last syllable:

00  $\overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{---} \overset{\Delta}{\underset{\text{di}}{\text{di}}}$

$\overset{\chi}{\underset{\text{di}}{\text{di}}} \text{---} \overset{\epsilon}{\underset{\text{di}}{\text{di}}} \overset{\chi}{\text{---}}$

01  $\overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{---} \overset{\Delta}{\underset{\text{di}}{\text{di}}}$

$\overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{---} \overset{\epsilon}{\underset{\text{di}}{\text{di}}} \overset{\chi}{\text{---}}$

001  $\overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{---} \overset{\Delta}{\underset{\text{di}}{\text{di}}}$

$\overset{\pi}{\underset{\text{di}}{\text{di}}} \text{---} \overset{\Delta}{\underset{\text{di}}{\text{di}}}$

00101  $\overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{---} \overset{\Delta}{\underset{\text{di}}{\text{di}}}$

10001  $\overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{---} \overset{\Delta}{\underset{\text{di}}{\text{di}}}$

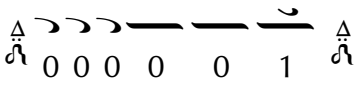
$\overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{---} \overset{\Delta}{\underset{\text{di}}{\text{di}}}$

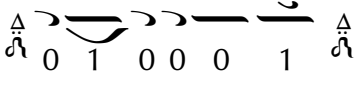
$\overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{---} \overset{\Delta}{\underset{\text{di}}{\text{di}}}$

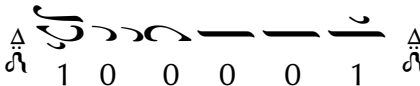
X0001  $\overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{---} \overset{\Delta}{\underset{\text{di}}{\text{di}}}$

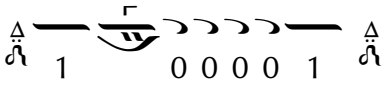
1000X  $\overset{\Delta}{\underset{\text{di}}{\text{di}}} \text{---} \overset{\Delta}{\underset{\text{di}}{\text{di}}}$

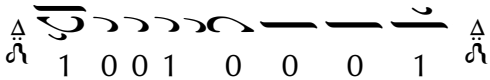
*First Mode - Heirmologic*

000001 

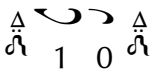
010001 

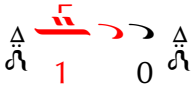
100001 

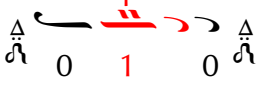
10010001 


10010001 

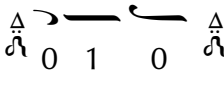
Accented on second to last syllable:

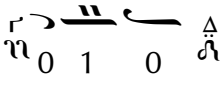
10 

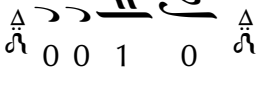


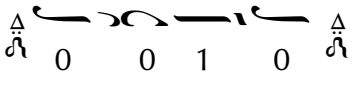
010 

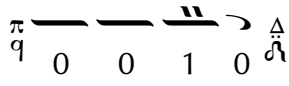


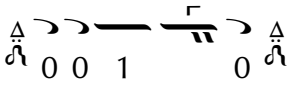




0010 



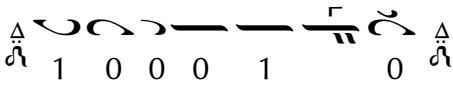
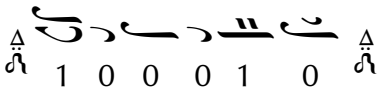
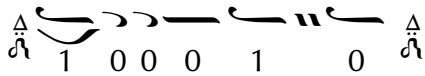
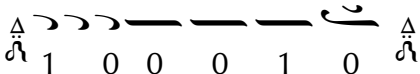
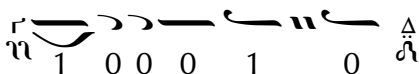
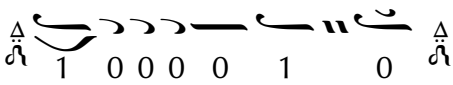
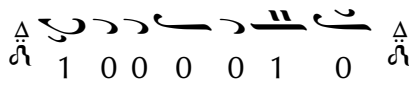
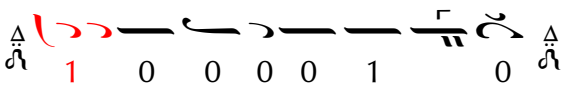



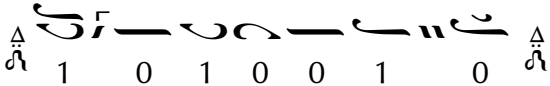
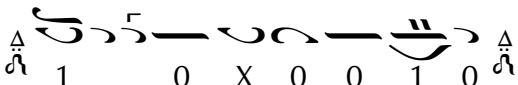
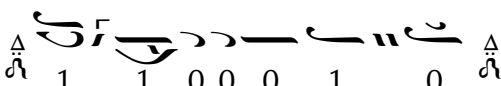
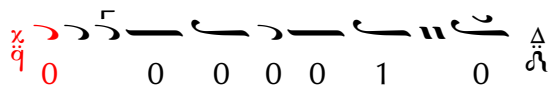

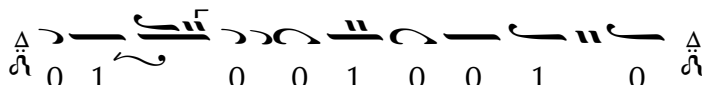
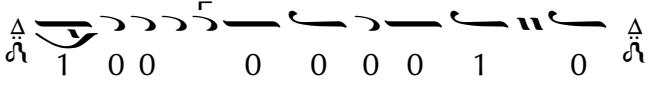
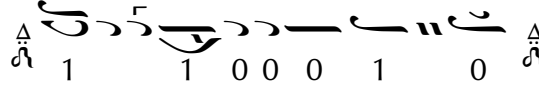
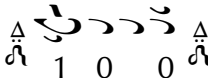





First Mode - Heirmologic

|        |          |             |          |       |          |
|--------|----------|-------------|----------|-------|----------|
|        | $\pi$    |             | $\Delta$ |       |          |
|        | $\eta$   | 0 0 1 0     | $\Delta$ |       |          |
| 00010  | $\Delta$ |             | $\Delta$ |       |          |
|        | $\pi$    |             | $\Delta$ |       |          |
|        | $\Delta$ |             | $\Delta$ |       |          |
|        | $\eta$   | 0 0 0 1 0   | $\Delta$ |       |          |
| 10010  | $\Delta$ |             | $\Delta$ |       |          |
|        | $\Delta$ | 1 0 0 1 0   | $\Delta$ | 1 0 0 | 1 0      |
|        | $\Delta$ |             | $\Delta$ |       | $\Delta$ |
|        | $\Delta$ | 1 0 0 1 0   | $\Delta$ |       | $\Delta$ |
| 000010 | $\Delta$ |             | $\Delta$ |       |          |
| 010010 | $\eta$   |             | $\Delta$ |       |          |
|        | $\Delta$ |             | $\Delta$ |       |          |
| 100010 | $\Delta$ |             | $\Delta$ |       |          |
|        | $\Delta$ |             | $\Delta$ |       |          |
|        | $\Delta$ | 1 0 0 0 1 0 | $\Delta$ | 1     | 1        |

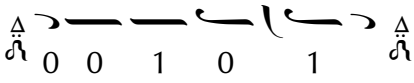
*First Mode - Heirmologic*

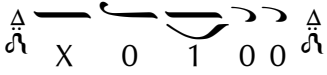
|  |  |   |
|--|--|---|
|  |     |   |
|  |     |     |
|  |     |    |
| 1000010                                    |     |    |
|  |     |    |
| 0010010                                    |    |   |
|  |   |   |
| 1010010                                    |   |   |
| 10X0010                                    |   |   |
| 1100010                                    |   |   |
| 0000010                                    |   |  |
| 010010010                                  |  |   |
| 100000010                                  |  |   |
| <u>Accented on third to last syllable:</u> |  |  |
|  | 1100010  |   |
| 100  |   |  |
|  | 100100010  |   |


(The purple notes in this formula are orthographically incorrect, however this combination is frequent in the Zoe Anastasimatarion)

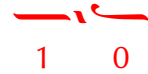


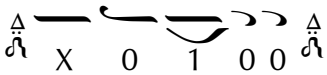
*First Mode - Heirmologic*

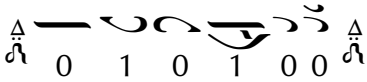
00101   $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  0 0 1 0 1  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

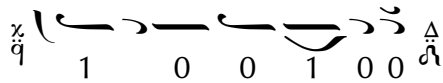
X0100   $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  X 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

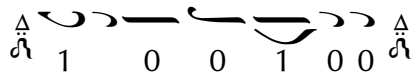
000100   $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  0 0 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

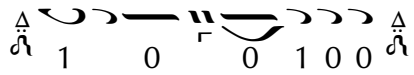
  
1 0

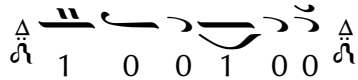
X0100   $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  X 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

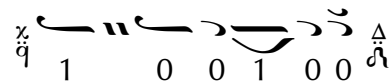
010100   $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  0 1 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

100100   $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  1 0 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

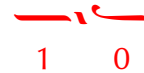
  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  1 0 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

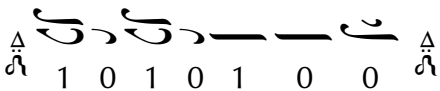
  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  1 0 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

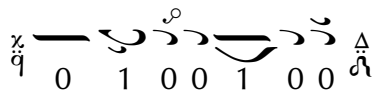
  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  1 0 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  1 0 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  1 0 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

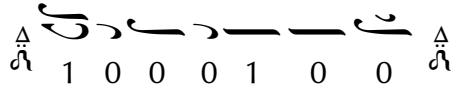
  
1 0

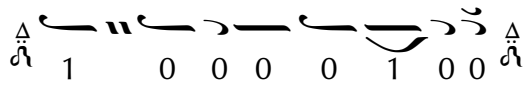
1010100   $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  1 0 1 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

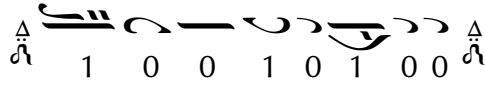
0100100   $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  0 1 0 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

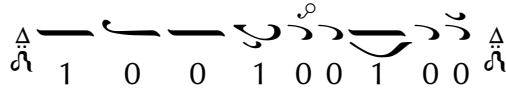
1000100   $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$  1 0 0 0 1 0 0  $\begin{matrix} \Delta \\ \text{A} \\ \text{A} \end{matrix}$

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 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 1 \quad 0 \quad 0 \quad 0 \quad 1 \quad 0 \quad 0 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

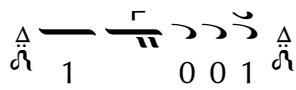
1000100   
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 1 \quad 0 \quad 0 \quad 0 \quad 0 \quad 1 \quad 0 \quad 0 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$


10010100   
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 1 \quad 0 \quad 0 \quad 1 \quad 0 \quad 1 \quad 0 \quad 0 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

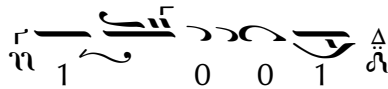
100100100   
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 1 \quad 0 \quad 0 \quad 1 \quad 0 \quad 0 \quad 1 \quad 0 \quad 0 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

Accented on fourth to last syllable:

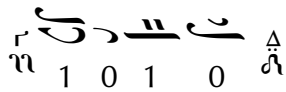
1001    
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 1 \quad 0 \quad 0 \quad 1 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$        $\overset{\pi}{\underset{\eta}{\text{q}}} \quad 1 \quad 0 \quad 0 \quad 1 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

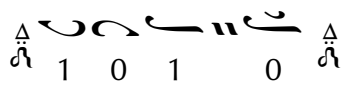
  
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 1 \quad 0 \quad 0 \quad 1 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

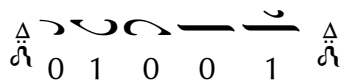
  
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 1 \quad 0 \quad 0 \quad 1 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

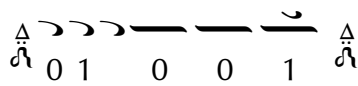
  
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 1 \quad 0 \quad 0 \quad 1 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

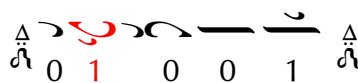
   
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 1 \quad 0 \quad 0 \quad 1 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$        $\overset{\pi}{\underset{\eta}{\text{q}}} \quad 1 \quad 0 \quad 0 \quad 1 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

1010   
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 1 \quad 0 \quad 1 \quad 0 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

  
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 1 \quad 0 \quad 1 \quad 0 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

01001   
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 0 \quad 1 \quad 0 \quad 0 \quad 1 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

  
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 0 \quad 1 \quad 0 \quad 0 \quad 1 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

  
 $\overset{\Delta}{\underset{\Delta}{\text{A}}} \quad 0 \quad 1 \quad 0 \quad 0 \quad 1 \quad \overset{\Delta}{\underset{\Delta}{\text{A}}}$

  
 1





**B) Medial Cadences on Ke**

Accented on last syllable:

001  $\begin{array}{c} \pi \\ \grave{\alpha} \end{array} \overline{0} \overline{0} \overline{1} \begin{array}{c} \times \\ \grave{\alpha} \end{array}$

1001  $\begin{array}{c} \Delta \\ \acute{\alpha} \end{array} \overline{1} \overline{0} \overline{0} \overline{1} \begin{array}{c} \times \\ \grave{\alpha} \end{array}$

00001  $\begin{array}{c} \Delta \\ \acute{\alpha} \end{array} \overline{0} \overline{0} \overline{0} \overline{0} \overline{1} \begin{array}{c} \times \\ \grave{\alpha} \end{array}$

Accented on second to last syllable:

10  $\begin{array}{c} \Delta \\ \acute{\alpha} \end{array} \overline{1} \overline{0} \begin{array}{c} \times \\ \grave{\alpha} \end{array}$

010  $\begin{array}{c} \pi \\ \grave{\alpha} \end{array} \overline{0} \overline{1} \overline{0} \begin{array}{c} \times \\ \grave{\alpha} \end{array}$

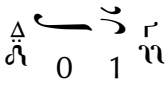
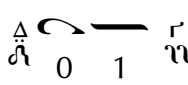
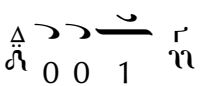


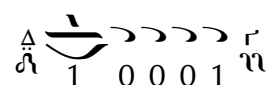
0010  $\begin{array}{c} \pi \\ \grave{\alpha} \end{array} \overline{0} \overline{0} \overline{1} \overline{0} \begin{array}{c} \times \\ \grave{\alpha} \end{array}$

Accented on fourth to last syllable:

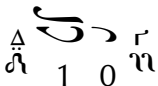
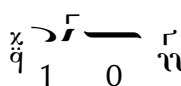
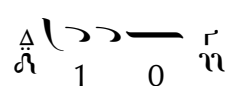
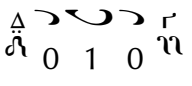
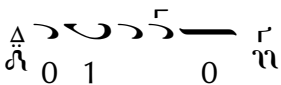


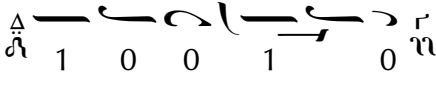
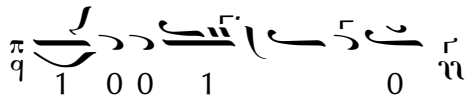
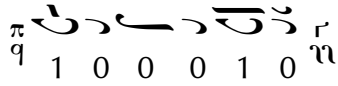
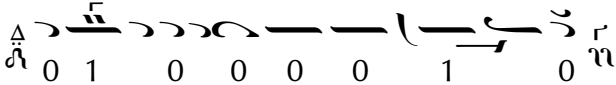
1001  $\begin{array}{c} \pi \\ \grave{\alpha} \end{array} \overline{1} \overline{0} \overline{0} \overline{1} \begin{array}{c} \times \\ \grave{\alpha} \end{array}$

C) Medial Cadences on Ga

Accented on last syllable:

|       |   |  |   |
|-------|---|--|---|
| 01    |  |  |   |
| 001   |  |  |   |
| 10001 |  |   | 10001  |

Accented on second to last syllable:

|          |  |   |   |
|----------|--|---|---|
| 10       |     |  |    |
| 010      |   |   |   |
|          |   |   |   |
|          |   |   |  |
| 10010    |   |   |   |
|          |   |   |   |
| 100010   |   |   |   |
| 01000010 |  |   |   |



D) Medial Cadences on Pa

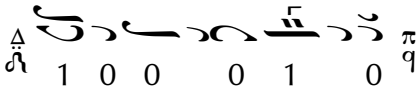
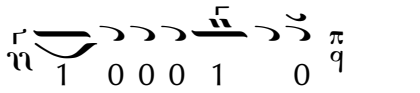
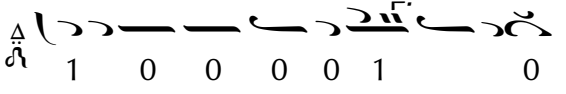
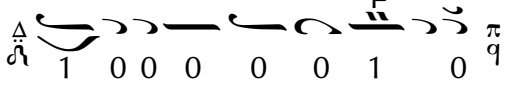
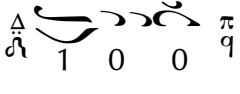
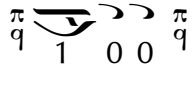
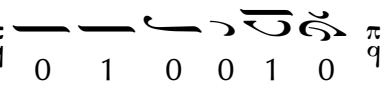
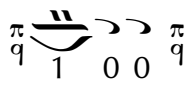

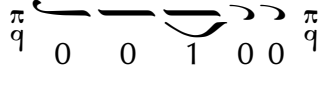

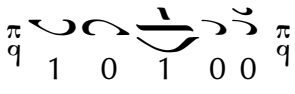
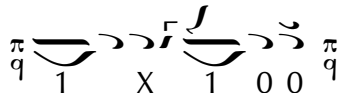
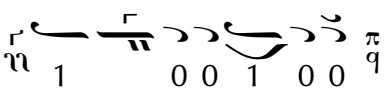
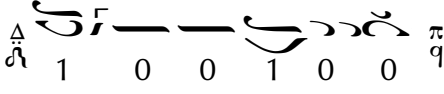
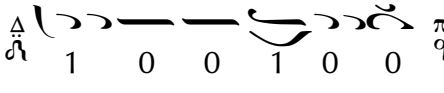
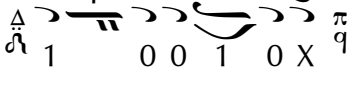
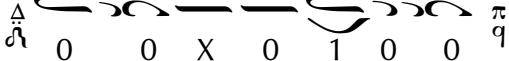
Accented on last syllable:

|           |  |        |  |
|-----------|--|--------|--|
| 01        |  | 001    |  |
| 10001     |  |        |  |
| 010001    |  | 100001 |  |
| 0010001   |  |        |  |
| 10010001  |  |        |  |
| 100010001 |  |        |  |

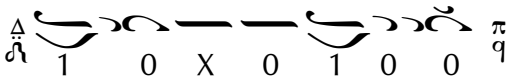
Accented on second to last syllable:

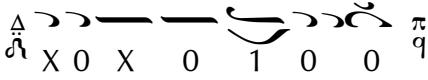
|       |  |    |  |
|-------|--|----|--|
| 010   |  |    |  |
|       |  | 10 |  |
| 0010  |  |    |  |
| 0X010 |  |    |  |
| 10010 |  |    |  |
|       |  |    |  |

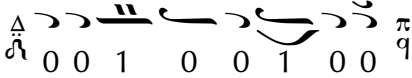
*First Mode - Heirmologic*

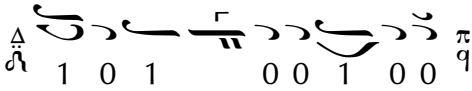
|  |   |   |
|--|---|---|
| 100010                                     |    |           |
| 1000010                                    |    |   |
| <u>Accented on third to last syllable:</u> |   |   |
|  |   | 10000010  |
| 100  |    | 01000010  |
|  |    | 010010    |
|  |    |   |
| 0100                                       |    |   |
| 00100                                      |   |   |
| 10100                                      |  |         |
| 1X100                                      |  |   |
| 100100                                     |  |   |
|  |  |   |
|  |  |   |
| 10010X                                     |  |   |
| 00X0100                                    |  |   |

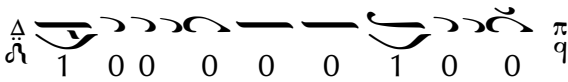
*First Mode - Heirmologic*

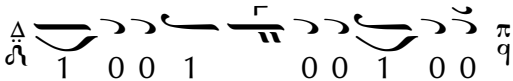
10X0100 

X0X0100 

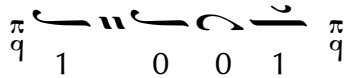
00100100 

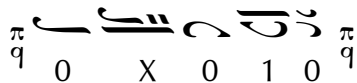
10100100 

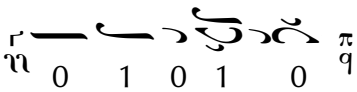
100000100 


100100100 


Accented on fourth to last syllable:


01001 


0X010 

01010 

001010 

0001001 

1001001 

0101001010 

E) Formulae with Fthores

Accented on last syllable:

|        |  |  |
|--------|--|--|
| 10001  |  |  |
|        |  |  |
| X0001  |  |  |
| 100001 |  |  |

Accented on second to last syllable:

|         |  |
|---------|--|
| 0100010 |  |
|---------|--|

Accented on third to last syllable:

|        |  |
|--------|--|
| 0100   |  |
| 100100 |  |

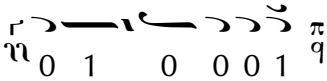
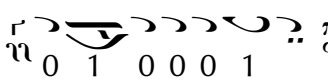
Accented on fourth to last syllable:

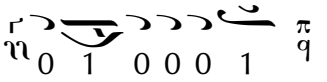
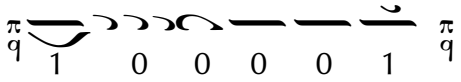
|      |  |  |
|------|--|--|
| 1001 |  |  |
|      |  |  |

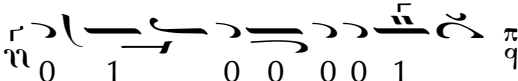


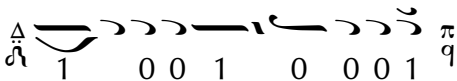
F) Ending Formulae

Accented on last syllable:

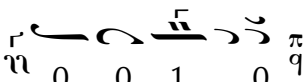
010001  

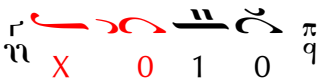

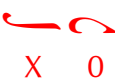
 

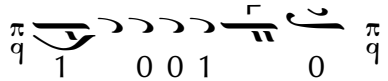
0100001 

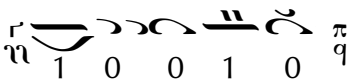
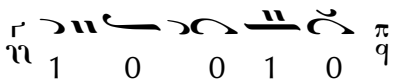
10010001 

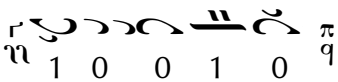
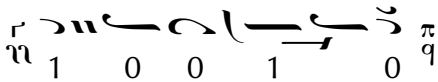
Accented on second to last syllable:

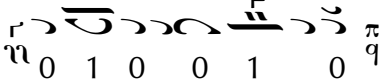
0010 

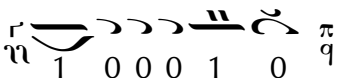
X010   

10010 


 

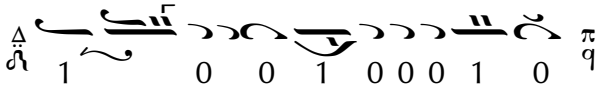
 


010010 

100010 


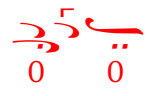
*First Mode - Heirmologic*


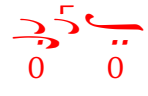
0100010 


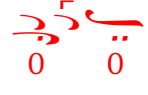
10010010 


100100010 


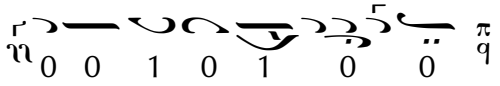
Accented on third to last syllable:


0100  

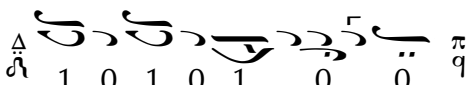
00100  


100100  



0010100  

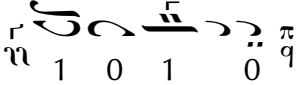

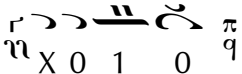


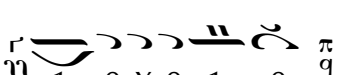

1000100 

1010100 

10010100 

*First Mode - Heirmologic*

Accented on fourth to last syllable:


|         |   |  |
|---------|---|--|
| 1010    |    |  |
| X010    |   |  |
|         |    |  |
| 01001   |   |  |
| 001001  |   |  |
| 10X010  |  |  |
| 1001001 |  |  |

**G) Endings for Theotokia\***

Accented on last syllable:


(Also use formulae ending in 100)


From Ga


010X001 

Accented on second to last syllable:

From Ga

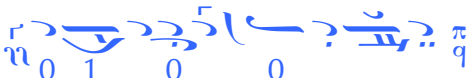
10010 


010010 

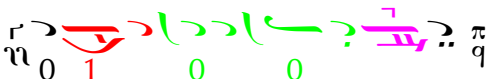
10100010 

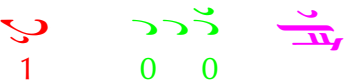
Accented on third to last syllable:

From Ga

0100 

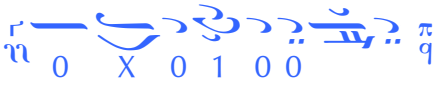







\* The formulae in blue in this section are from the Athonite oral tradition, as represented in the book *Παρακλητική, Μουσικὸν Ἐγκόλπιον, Πλάγιοι Ἦχοι, Ἱεροθέου Ἱερομονάχου, ἐκδόσεις Ἱ.Μ. Φιλοθέου, Ἅγιον Ὄρος, 2004.*

*First Mode - Heirmologic*


0X0100 

010100 


100100 



0010100 

0100100 

From Di

100100 

Accented on fourth to last syllable:

From Ga

0101001 