

**RHYTHMS ANALYSIS: STEINER TREES AND DIRECTED SWAP
DISTANCE - Nov. 3, 2006**

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Appendix A

Centers of the 2 Families of *Binary* Rhythms

Dataset 4:

| | |
|------------|-------------------------|
| [xx.xx.x.] | 'ArgentinianMilonga' |
| [xx.xx.x.] | 'AfroVenezuelanDrums' |
| [x..xx.x.] | 'Habanera' |
| [xx.xx.x.] | 'DetailedFromZambaFoot' |
| [x.xx..x.] | 'DocmioVar1c1' |
| [xx.x..x.] | 'DocmioVar1c2' |
| [.xx..x.] | 'DocmioVar1d1' |
| [.x.x..x.] | 'DocmioVar1d2' |
| [x.xx..xx] | 'DocmioVar2c' |
| [xx.x.xxx] | 'DocmioVar4c' |
| [xx.x...x] | 'DocmioVar6c' |
| [x..x....] | 'DocmioVar5a' |
| [x..xxxx.] | 'DocmioVar4a' |

Dataset 5:

| | |
|---------------------|----------------------------------|
| [xx.xx.x.x..x..x.] | 'BinarizedZambaFootPlusMolossus' |
| [x..x..x...x.x...] | 'Binarized6_8ClaveSon' |
| [x..x..x...x.x.x.] | 'Binarized6_8ClaveSonVar1' |
| [x..x..x...x.x.x.] | 'Binarized6_8ClaveSonVar2' |
| [x..x..xx..x.x..x.] | 'BinarizedBembe' |
| [x..x..x...x.x...] | 'RareBinarizedClaveSon' |

Dataset 4 - Hamming MinSum Set

The minsum point(s) are:

[xx.x..x.] DocmioVar1c2

The minsum distance is: 23

Dataset 4 - Hamming MinMax Set

The minmax point(s) are:
[xx.x..x.] DocmioVar1c2
The minmax distance is: 3

Dataset 4 - Hamming MinSum

The minsum point(s) are:
[xx.x..x.] DocmioVar1c2
The minsum distance is: 23

Dataset 4 - Hamming MinMax

The minmax point(s) are:
[x..x..x.] Rhythm not found in database...
[x..x..xx] Rhythm not found in database...
[xx.x..x.] DocmioVar1c2
The minmax distance is: 3

Dataset 4 - Directed Swap MinSum Set

The minsum point(s) are:
[xx.x..x.] DocmioVar1c2
The minsum distance is: 24

Dataset 4 - Directed Swap MinMax Set

The minmax point(s) are:
[x..xx.x.] Habanera
[x.xx..x.] DocmioVar1c1
[xx.x..x.] DocmioVar1c2
[.x.x..x.] DocmioVar1d2
The minmax distance is: 4

Dataset 4 - Directed Swap MinSum

The minsum point(s) are:
[x..x..x.] Rhythm not found in database...
[xx.x..x.] DocmioVar1c2
The minsum distance is: 24

Dataset 4 - Directed Swap MinMax

The minmax point(s) are:
[x..x..x.] Rhythm not found in database...
The minmax distance is: 3

Dataset 5 - Hamming MinSum Set

The minsum point(s) are:
[x..x..x...x.x...] Binarized6_8ClaveSon
[x..x..x...x.x.x.] Binarized6_8ClaveSonVar1
[x..x..x...x.x.x.] Binarized6_8ClaveSonVar1
The minsum distance is: 13

Dataset 5 - Hamming MinMax Set

The minmax point(s) are:
[x..x..x...x.x.x.] Binarized6_8ClaveSonVar1
[x..x..x...x.x.x.] Binarized6_8ClaveSonVar1
The minmax distance is: 6

Dataset 5 - Hamming MinSum

The minsum point(s) are:
[x..x..x...x.x...] Binarized6_8ClaveSon
[x..x..x...x.x.x.] Binarized6_8ClaveSonVar1
The minsum distance is: 13

Dataset 5 - Hamming MinMax

The minmax point(s) are:
[x..x..x.....] Rhythm not found in database...
[x..x..x.....x.] Rhythm not found in database...
[x..x..x.....xx] Rhythm not found in database...
[x..x..x...x.x.] Rhythm not found in database...
[x..x..x...x...] Rhythm not found in database...
[x..x..x...x.x] Rhythm not found in database...
[x..x..x...x.xx] Rhythm not found in database...
[x..x..x...xx...] Rhythm not found in database...
[x..x..x...xx.x.] Rhythm not found in database...
[x..x..x...xx.xx] Rhythm not found in database...
[x..x..x...x...x.] Gahu
[x..x..x...xx...] Soukous
[x..x..x...xx.x.] Rhythm not found in database...
[x..x..x...xxx.x.] Rhythm not found in database...
[x..x..x.x.....] Rhythm not found in database...
[x..x..x.x.....x] Rhythm not found in database...
[x..x..x.x.....xx] Rhythm not found in database...
[x..x..x.x...x...] Rhythm not found in database...
[x..x..x.x...x.x.] Rhythm not found in database...
[x..x..x.x...x.xx] Rhythm not found in database...
[x..x..x.x...xx...] Rhythm not found in database...
[x..x..x.x...xx.x.] Rhythm not found in database...
[x..x..x.x...xx.xx] Rhythm not found in database...
[x..x..x.x.x.....] Rhythm not found in database...
[x..x..x.x.x...x.] Rhythm not found in database...

[x..x..x.x.x.x.x.] Rhythm not found in database...
[x..x..x.x.xx....] Rhythm not found in database...
[x..x..x.x.xxx...] Rhythm not found in database...
[x..x..x.x.xxx.x.] Rhythm not found in database...
[x..x..xx.....x.] Rhythm not found in database...
[x..x..xx...x....] Rhythm not found in database...
[x..x..xx...x..x.] Rhythm not found in database...
[x..x..xx...xx.x.] Rhythm not found in database...
[x..x..xxx.....] Rhythm not found in database...
[x..x..xxx.....x.] Rhythm not found in database...
[x..x..xxx...x.x.] Rhythm not found in database...
[x..x..xxx..xx...] Rhythm not found in database...
[x..x..xxx..xx.x.] Rhythm not found in database...
[x..xx.x.....] Rhythm not found in database...
[x..xx.x.....x] Rhythm not found in database...
[x..xx.x.....xx] Rhythm not found in database...
[x..xx.x.....x...] Rhythm not found in database...
[x..xx.x.....x.x.] Rhythm not found in database...
[x..xx.x.....x.xx] Rhythm not found in database...
[x..xx.x...xx...] Rhythm not found in database...
[x..xx.x...xx.x.] Rhythm not found in database...
[x..xx.x...xx.xx] Rhythm not found in database...
[x..xx.x...x....] Rhythm not found in database...
[x..xx.x...x...x.] Rhythm not found in database...
[x..xx.x...x.x.x.] Rhythm not found in database...
[x..xx.x...xx...] Rhythm not found in database...
[x..xx.x...xxx...] Rhythm not found in database...
[x..xx.x...xxx.x.] Rhythm not found in database...
[x..xx.x.x...x...] Rhythm not found in database...
[x..xx.x.x...x.x.] Rhythm not found in database...
[x..xx.x.x...x.xx] Rhythm not found in database...
[x..xx.x.x.x....] Rhythm not found in database...
[x..xx.x.x.x.x...] Rhythm not found in database...
[x..xx.x.x.x.x.x.] Rhythm not found in database...
[x..xx.x.x.xxx...] Rhythm not found in database...
[x..xx.xx.....] Rhythm not found in database...
[x..xx.xx.....x.] Rhythm not found in database...
[x..xx.xx...x.x.] Rhythm not found in database...
[x..xx.xx...xx...] Rhythm not found in database...
[x..xx.xx...xx.x.] Rhythm not found in database...
[x..xx.xxx...x...] Rhythm not found in database...
[x..xx.xxx...x.x.] Rhythm not found in database...
[xx.x..x.....] Rhythm not found in database...
[xx.x..x.....x] Rhythm not found in database...
[xx.x..x.....xx] Rhythm not found in database...
[xx.x..x.....x...] Rhythm not found in database...
[xx.x..x.....x.x.] Rhythm not found in database...
[xx.x..x.....x.xx] Rhythm not found in database...
[xx.x..x.....xx...] Rhythm not found in database...

[xx.x..x...xx..x] Rhythm not found in database...
 [xx.x..x...xx.xx] Rhythm not found in database...
 [xx.x..x...x.....] Rhythm not found in database...
 [xx.x..x...x...x.] Rhythm not found in database...
 [xx.x..x...x.x.x.] Rhythm not found in database...
 [xx.x..x...xx....] Rhythm not found in database...
 [xx.x..x...xxx...] Rhythm not found in database...
 [xx.x..x...xxx.x.] Rhythm not found in database...
 [xx.x..x.x...x...] Rhythm not found in database...
 [xx.x..x.x...x..x] Rhythm not found in database...
 [xx.x..x.x...x.xx] Rhythm not found in database...
 [xx.x..x.x.x.....] Rhythm not found in database...
 [xx.x..x.x.x.x...] Rhythm not found in database...
 [xx.x..x.x.x.x.x.] Rhythm not found in database...
 [xx.x..x.x.xxx...] Rhythm not found in database...
 [xx.x..xx.....] Rhythm not found in database...
 [xx.x..xx.....x.] Rhythm not found in database...
 [xx.x..xx...x.x.] Rhythm not found in database...
 [xx.x..xx...xx...] Rhythm not found in database...
 [xx.x..xx...xx.x.] Rhythm not found in database...
 [xx.x..xxx...x...] Rhythm not found in database...
 [xx.x..xxx...x.x.] Rhythm not found in database...
 [xx.xx.x....x...] Rhythm not found in database...
 [xx.xx.x....x..x] Rhythm not found in database...
 [xx.xx.x....x.xx] Rhythm not found in database...
 [xx.xx.x...x.....] Rhythm not found in database...
 [xx.xx.x...x.x...] Rhythm not found in database...
 [xx.xx.x...x.x.x.] Rhythm not found in database...
 [xx.xx.x...xxx...] Rhythm not found in database...
 [xx.xx.x.x.x.x...] Rhythm not found in database...
 [xx.xx.xx....x...] Rhythm not found in database...
 [xx.xx.xx....x.x.] Rhythm not found in database...

The minmax distance is: 5

Dataset 5 - Directed Swap MinSum Set

The minsum point(s) are:

[x..x...x.x.x.] Binarized6_8ClaveSonVar1
 [x..x...x.x.x.] Binarized6_8ClaveSonVar1

The minsum distance is: 12

Dataset 5 - Directed Swap MinMax Set

The minmax point(s) are:

[x..x...x.x.x.] Binarized6_8ClaveSonVar1
 [x..x...x.x.x.] Binarized6_8ClaveSonVar1

The minmax distance is: 5

Dataset 5 - Directed Swap MinSum

The minsum point(s) are:
[x..x..x...x.x.x.] Binarized6_8ClaveSonVar1
The minsum distance is: 12

Dataset 5 - Directed Swap MinMax

The minmax point(s) are:
[.x.x..x..x..x.x.] Rhythm not found in database...
[x...x.x..x..x.x.] Rhythm not found in database...
[x..x..x...x..x.] Rhythm not found in database...
[x..x..x...xx..x.] Rhythm not found in database...
[x..x..x..x..x.x.] Rhythm not found in database...
[x..x..x..x.x..x.] Rhythm not found in database...
[x..x..x.x...x.x.] Rhythm not found in database...
[x..x..x.x.x...x.] Rhythm not found in database...
[x..x.xx..x..x.x.] Rhythm not found in database...
[x..xx.x...x.x.x.] Rhythm not found in database...
The minmax distance is: 4

Appendix B

Centers of the Corresponding 2 Families of *Ternary* Rhythms

Dataset 6:

| | |
|----------|-----------------------|
| [xxxx.x] | 'TribrachPlusTrochee' |
| [xxxxx.] | 'ZambaFoot1' |
| [x.xxx.] | 'Choriamb' |
| [xxxxx.] | 'ZambaFoot2' |
| [xxx.x.] | 'MolossusVar1c1' |
| [xxx.x.] | 'MolossusVar1c2' |
| [.xx.x.] | 'MolossusVar1d1' |
| [.xx.x.] | 'MolossusVar1d2' |
| [xxx.xx] | 'MolossusVar2c' |
| [xxxxxx] | 'MolossusVar4c' |
| [xxx..x] | 'MolossusVar6c' |
| [x.x...] | 'MolossusVar5a' |
| [x.xxxx] | 'MolossusVar4a' |

Dataset 7:

| | |
|----------------|-------------------------|
| [xxxxx.x.x.x.] | 'ZambaFootPlusMolossus' |
| [x.x.x..x.x..] | 'The6_8ClaveSon' |
| [x.x.x..x.x.x] | 'The6_8ClaveSonVar1' |
| [x.x.x..x.xx.] | 'The6_8ClaveSonVar2' |
| [x.x.xx.x.x.x] | 'TernaryBembe' |
| [x.x.x..x.x..] | 'TernaryClaveSon' |

Dataset 6 - Hamming MinSum Set

The minsum point(s) are:

[xxx.x.] MolossusVar1c1

[xxx.x.] MolossusVar1c1

The minsum distance is: 19

Dataset 6 - Hamming MinMax Set

The minmax point(s) are:
[xxxxx.] ZambaFoot1
[xxxxx.] ZambaFoot1
[xxx.x.] MolossusVar1c1
[xxx.x.] MolossusVar1c1
[xxx.xx] MolossusVar2c
The minmax distance is: 3

Dataset 6 - Hamming MinSum

The minsum point(s) are:
[xxx.x.] MolossusVar1c1
The minsum distance is: 19

Dataset 6 - Hamming MinMax

The minmax point(s) are:
[x.x.xx] Rhythm not found in database...
[xxx.x.] MolossusVar1c1
[xxx.xx] MolossusVar2c
[xxxx..] Rhythm not found in database...
[xxxxx.] ZambaFoot1
The minmax distance is: 3

Dataset 6 - Directed Swap MinSum Set

The minsum point(s) are:
[xxx.x.] MolossusVar1c1
[xxx.x.] MolossusVar1c1
The minsum distance is: 18

Dataset 6 - Directed Swap MinMax Set

The minmax point(s) are:
[x.xxx.] Choriamb
[xxx.x.] MolossusVar1c1
[xxx.x.] MolossusVar1c1
[.xx.x.] MolossusVar1d1
[.xx.x.] MolossusVar1d1
The minmax distance is: 3

Dataset 6 - Directed Swap MinSum

The minsum point(s) are:
[xxx.x.] MolossusVar1c1
The minsum distance is: 18

Dataset 6 - Directed Swap MinMax

The minmax point(s) are:
[.xx.x.] MolossusVar1d1
[x..xx.] Rhythm not found in database...
[x.x..x] Rhythm not found in database...
[x.x.x.] Rhythm not found in database...
[x.xxx.] Choriamb
[xx..x.] Rhythm not found in database...
[xxx.x.] MolossusVar1c1
The minmax distance is: 3

Dataset 7 - Hamming MinSum Set

The minsum point(s) are:
[x.x.x..x.x..] The6_8ClaveSon
[x.x.x..x.x..] The6_8ClaveSon
The minsum distance is: 11

Dataset 7 - Hamming MinMax Set

The minmax point(s) are:
[x.x.x..x.xx.] The6_8ClaveSonVar2
The minmax distance is: 6

Dataset 7 - Hamming MinSum

The minsum point(s) are:
[x.x.x..x.x..] The6_8ClaveSon
The minsum distance is: 11

Dataset 7 - Hamming MinMax

The minmax point(s) are:
[x.x.x.....] Rhythm not found in database...
[x.x.x....x.] Rhythm not found in database...
[x.x.x....xx] Rhythm not found in database...
[x.x.x....xx.] Rhythm not found in database...
[x.x.x...x...] Rhythm not found in database...
[x.x.x...x.x] Rhythm not found in database...
[x.x.x...x.xx] Rhythm not found in database...
[x.x.x...xx..] Rhythm not found in database...
[x.x.x...xxx.] Rhythm not found in database...
[x.x.x...xxxx] Rhythm not found in database...
[x.x.x...x..x.] Seguiriya
[x.x.x...xx...] Rhythm not found in database...
[x.x.x...xx.x.] Rhythm not found in database...
[x.x.x...xx.xx] Rhythm not found in database...
[x.x.x...xxxx.] Rhythm not found in database...

[x.x.x.x....] Rhythm not found in database...
[x.x.x.x...x] Rhythm not found in database...
[x.x.x.x...xx] Rhythm not found in database...
[x.x.x.x..x..] Rhythm not found in database...
[x.x.x.x..xx.] Rhythm not found in database...
[x.x.x.x..xxx] Rhythm not found in database...
[x.x.x.x.xx..] Rhythm not found in database...
[x.x.x.x.xx.x] Soli
[x.x.x.x.xxxx] Rhythm not found in database...
[x.x.x.xx....] Rhythm not found in database...
[x.x.x.xx..x.] Rhythm not found in database...
[x.x.x.xx..xx] Rhythm not found in database...
[x.x.x.xx.xx.] Asaadua
[x.x.x.xxx...] Rhythm not found in database...
[x.x.x.xxx..x] Rhythm not found in database...
[x.x.x.xxx.xx] Rhythm not found in database...
[x.x.x.xxxx..] Rhythm not found in database...
[x.x.x.xxxxx.] Rhythm not found in database...
[x.x.x.xxxxxx] Rhythm not found in database...
[x.x.xx....x.] Rhythm not found in database...
[x.x.xx..x..] Rhythm not found in database...
[x.x.xx..xxx.] Rhythm not found in database...
[x.x.xx.xx.x.] Rhythm not found in database...
[x.x.xxx....] Rhythm not found in database...
[x.x.xxx..xx.] Rhythm not found in database...
[x.x.xxx.xx..] Rhythm not found in database...
[x.x.xxxx..x.] Rhythm not found in database...
[x.x.xxxxx..] Rhythm not found in database...
[x.x.xxxxxxx.] Rhythm not found in database...
[x.xxx.....] Rhythm not found in database...
[x.xxx.....x] Rhythm not found in database...
[x.xxx....xx] Rhythm not found in database...
[x.xxx....x..] Rhythm not found in database...
[x.xxx....xx.] Rhythm not found in database...
[x.xxx....xxx] Rhythm not found in database...
[x.xxx..xx..] Rhythm not found in database...
[x.xxx..xx.x] Rhythm not found in database...
[x.xxx..xxxx] Rhythm not found in database...
[x.xxx.x....] Rhythm not found in database...
[x.xxx..x..x.] Rhythm not found in database...
[x.xxx..x..xx] Rhythm not found in database...
[x.xxx..x.xx.] Rhythm not found in database...
[x.xxx..xx...] Rhythm not found in database...
[x.xxx..xx..x] Rhythm not found in database...
[x.xxx..xx.xx] Rhythm not found in database...
[x.xxx..xxx..] Rhythm not found in database...
[x.xxx..xxxx.] Rhythm not found in database...
[x.xxx..xxxxx] Rhythm not found in database...
[x.xxx.x..x..] Rhythm not found in database...

[x.xxx.x..x.x] Rhythm not found in database...
[x.xxx.x..xxx] Rhythm not found in database...
[x.xxx.xx....] Rhythm not found in database...
[x.xxx.xx...x] Rhythm not found in database...
[x.xxx.xx..xx] Rhythm not found in database...
[x.xxx.xx.x..] Rhythm not found in database...
[x.xxx.xx.xx.] Rhythm not found in database...
[x.xxx.xx.xxx] Rhythm not found in database...
[x.xxx.xxxx..] Rhythm not found in database...
[x.xxx.xxxx.x] Rhythm not found in database...
[x.xxx.xxxxxx] Rhythm not found in database...
[x.xxxx.....] Rhythm not found in database...
[x.xxxx...xx.] Rhythm not found in database...
[x.xxxx..xx..] Rhythm not found in database...
[x.xxxx.x..x.] Rhythm not found in database...
[x.xxxx.xx...] Rhythm not found in database...
[x.xxxx.xxxx.] Rhythm not found in database...
[x.xxxxx..x..] Rhythm not found in database...
[x.xxxxxx....] Rhythm not found in database...
[x.xxxxxx.xx.] Rhythm not found in database...
[x.xxxxxxxx..] Rhythm not found in database...
[xxx.x.....] Rhythm not found in database...
[xxx.x.....x] Rhythm not found in database...
[xxx.x....xx] Rhythm not found in database...
[xxx.x....x..] Rhythm not found in database...
[xxx.x....xx.] Rhythm not found in database...
[xxx.x....xxx] Rhythm not found in database...
[xxx.x...xx..] Rhythm not found in database...
[xxx.x...xx.x] Rhythm not found in database...
[xxx.x...xxxx] Rhythm not found in database...
[xxx.x.x....] Rhythm not found in database...
[xxx.x.x..x.] Rhythm not found in database...
[xxx.x.x..xx] Rhythm not found in database...
[xxx.x.x.xx..] Rhythm not found in database...
[xxx.x.xx...] Rhythm not found in database...
[xxx.x.xx..x] Rhythm not found in database...
[xxx.x.xx..xx] Rhythm not found in database...
[xxx.x.xxx..] Rhythm not found in database...
[xxx.x.xxxxx] Rhythm not found in database...
[xxx.x.x..x..] Rhythm not found in database...
[xxx.x.x..x.x] Rhythm not found in database...
[xxx.x.x..xxx] Rhythm not found in database...
[xxx.x.xx...] Rhythm not found in database...
[xxx.x.xx...x] Rhythm not found in database...
[xxx.x.xx..xx] Rhythm not found in database...
[xxx.x.xx.x..] Rhythm not found in database...
[xxx.x.xx.xx.] Rhythm not found in database...
[xxx.x.xx.xxx] Rhythm not found in database...

[xxx.x.xxxx..] Rhythm not found in database...
 [xxx.x.xxxx.x] Rhythm not found in database...
 [xxx.x.xxxxxx] Rhythm not found in database...
 [xxx.xx.....] Rhythm not found in database...
 [xxx.xx...xx.] Rhythm not found in database...
 [xxx.xx..xx..] Rhythm not found in database...
 [xxx.xx.x..x.] Rhythm not found in database...
 [xxx.xx.xx...] Rhythm not found in database...
 [xxx.xx.xxxx.] Rhythm not found in database...
 [xxx.xxx..x..] Rhythm not found in database...
 [xxx.xxxx...] Rhythm not found in database...
 [xxx.xxxx.xx.] Rhythm not found in database...
 [xxx.xxxxxx..] Rhythm not found in database...
 [xxxxx...x..] Rhythm not found in database...
 [xxxxx...x.x] Rhythm not found in database...
 [xxxxx...xxx] Rhythm not found in database...
 [xxxxx..x...] Rhythm not found in database...
 [xxxxx..x...x] Rhythm not found in database...
 [xxxxx..x..xx] Rhythm not found in database...
 [xxxxx..x.x..] Rhythm not found in database...
 [xxxxx..x.xx.] Rhythm not found in database...
 [xxxxx..x.xxx] Rhythm not found in database...
 [xxxxx..xxx..] Rhythm not found in database...
 [xxxxx..xxx.x] Rhythm not found in database...
 [xxxxx..xxxxx] Rhythm not found in database...
 [xxxxx.xx.x..] Rhythm not found in database...
 [xxxxx.xx.x.x] Rhythm not found in database...
 [xxxxx.xx.xxx] Rhythm not found in database...
 [xxxxx...x..] Rhythm not found in database...
 [xxxxx.x...] Rhythm not found in database...
 [xxxxx.x.xx.] Rhythm not found in database...
 [xxxxx.xxx..] Rhythm not found in database...
 [xxxxxxxx.x..] Rhythm not found in database...

The minmax distance is: 5

Dataset 7 - Directed Swap MinSum Set

The minsum point(s) are:
 [x.x.x..x.xx.] The6_8ClaveSonVar2
 The minsum distance is: 9

Dataset 7 - Directed Swap MinMax Set

The minmax point(s) are:
 [x.x.x..x.xx.] The6_8ClaveSonVar2
 The minmax distance is: 4

Dataset 7 - Directed Swap MinSum

The minsum point(s) are:
[x.x.x..x.xx.] The6_8ClaveSonVar2
The minsum distance is: 9

Dataset 7 - Directed Swap MinMax

The minmax point(s) are:
[x.x.x..xx.x.] Rhythm not found in database...
[x.x.x.x..xx.] Rhythm not found in database...
[x.xxx..x.xx.] Rhythm not found in database...
The minmax distance is: 3