Full SS Kernel Analysis for TEST

Model TEST – iAB_RBC_283.mat : iAB_RBC_283 with uncapped kernel of type Compact
calculated on Tue 26 Sep 2023 in 2.3 seconds.

```
Step time limit                  60.
Unbuffered externals exempted    0           Stop sampling when failure rate >       20
LP tolerance                     0.0001      Minimal, Maximal LP chord counts        {10, 50}
Fixed value tolerance            0.002       Maximal flips to find LP chords         25
Progenitor sample size           20          Aspect ratios ≥ this are flattened      50.
Max BFBF tree nodes              100 000     Diameters > this not flattened          0.002
BFBF random greedy sample size   500         Default capping radius                  1.
Gready search mixing fraction    0.8         Flux bounds ≥ this are taken as artificial  1000.
```
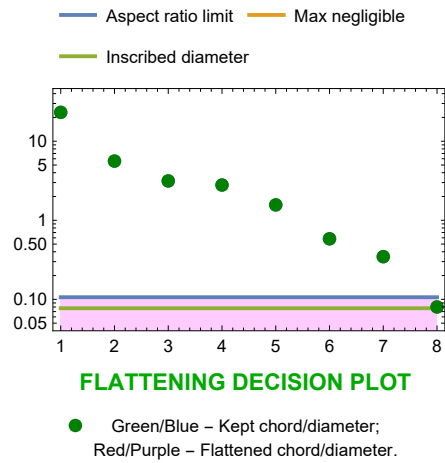
	Constraints	Variables	Ray Yield
Stoichio, objective and range constraints	1281	469	0
Remove artificial bounds, split reversibles	1127	645	0
Fix 271 fluxes, revert reversibles	368	198	0
Apply mass balance and fixed objective value	0	12	0
Apply nontrivial range constraints	33	12	0
Remove prismatic rays	30	9	3
Linealities yielding ray pairs	30	8	2
RSS after removing redundant constraints	14	8	0
RSS is closed, no capping done	14	8	0

All points in the solution space share the objective value 2.93556
All 8 chords were calculated by LP for the SSK.
The maximal inscribed hypersphere diameter is 0.0771845

The diameter and volume coverage ratios, between mutually similar simplices
  that encloses the periphery points or the complete SSK, are {81.1, 18.7}% respectively.

The mean SSK diameter is estimated to be in the range {2.34032, 4.66356}
 and the best value estimate is 2.88658

The sampled fraction of the SSK spanned by the
   peripheral point polytope, is in the 95% confidence interval {26, 31}%
The following reactions acquired fixed directions:
{EX_h2o2_e, backwards} {EX_nh4_e, forwards}

62 peripheral points were found.
   Assuming these to be representative, and combining with rays, extends
         the fixed value list to 408 items
The combined set of 4 rays span 4 of the total 4 ray dimensions.

VALIDATION TEST: Deconstruct FBA solutions (with/without artificial bounds)
        into the sum of a Kernel space flux, and a flux along a ray direction.
        Agreement between actual and reconstituted solutions are indicated by % discrepancy
        of total flux, and angle in degrees between their directions in flux space.

		Flux vector length	% Flux mismatch	Misalignment angle deg
FULL SS KERNEL	Not bounded	21.5	0.	0.
	Art. bounded	1732.1	0.	0.

FLATTENING DECISION PLOT

● Green/Blue – Kept chord/diameter;
Red/Purple – Flattened chord/diameter.

MAIN ORTHOGONAL CHORD LENGTHS
Cyan chords, magenta diameters
Blue line is max inscribed sphere diameter

The mean and maximal aspect ratio's are 8.3 and 289.6
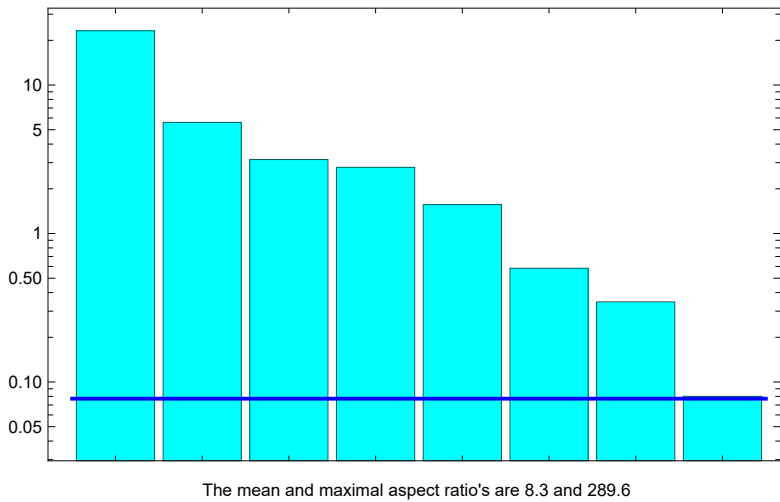
SPLIT DIAMETERS ALONG MAIN CHORD DIRECTIONS
Asymmetric overhang shown in light shading.

Average periphery point non–centrality 13.8%