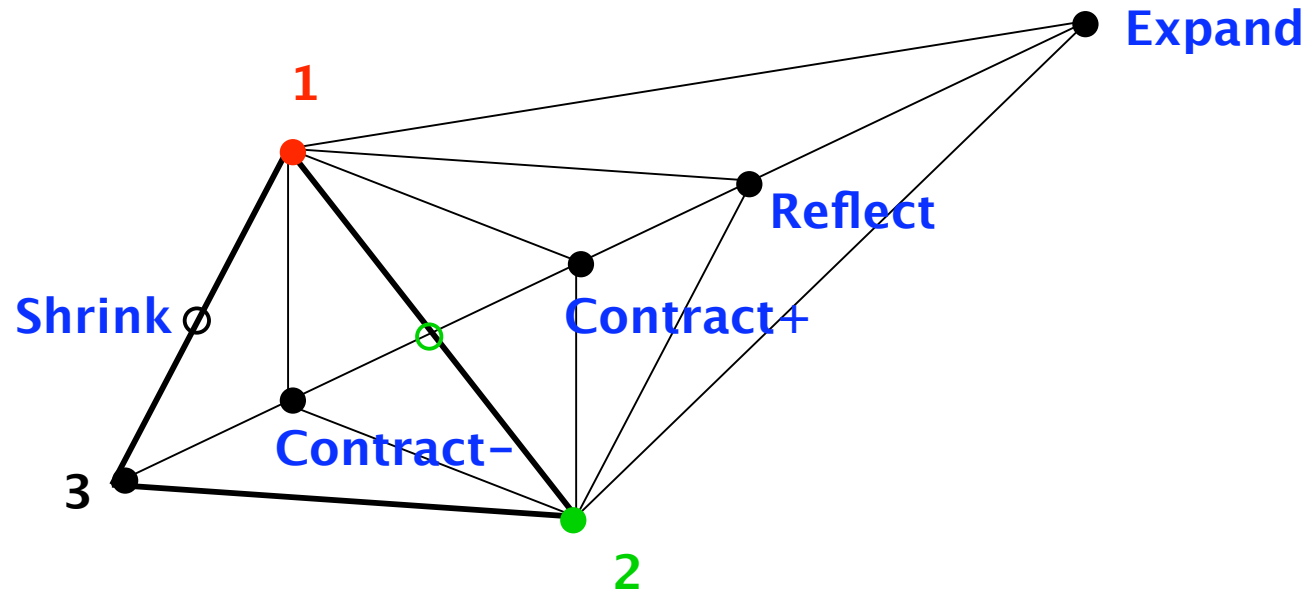


# Downhill Simplex Method

## Method of Minimization

- $\{1, 2, 3\}$  **1**(best) < **2**(next-to-the worst) < **3**(worst)
- Evaluate  $3_R$
- If  $3_R < 1$ ,
  - If  $3_E < 3_R$ ,  $\{1, 2, 3_E\}$  : **Expand** , if not,  $\{1, 2, 3_R\}$  : **Reflect**
- If  $1 < 3_R < 2$ ,  $\{1, 2, 3_R\}$  : **Reflect**
- If  $2 < 3_R < 3$ ,
  - If  $3_{C+} < 3_R$ ,  $\{1, 2, 3_{C+}\}$  : **Contract+** , if not,  $\{1, 2, 3_R\}$  : **Reflect**
- If  $3 < 3_R$ ,
  - If  $3_{C-} < 3$ ,  $\{1, 2, 3_{C-}\}$  : **Contract-** , if not,  $\{1, 2_S, 3_S\}$  : **Shrink**



# Luminosity Optimization (11/30)

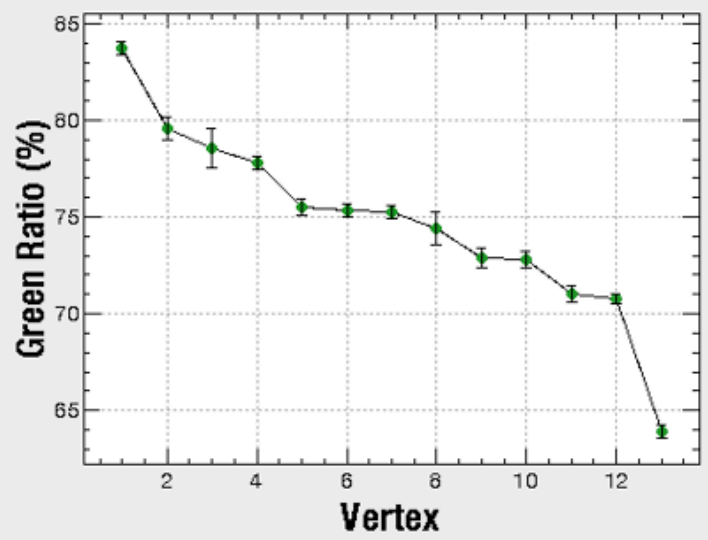
## Initial Simplex (List View)

<< Double click each line to set knob >>

#	R1L	R2L	R3L	R4L	EYL	EPYL	R1H	R2H	R3H	R4H	EYH	EPYH	Green Ratio	Time
NEXT:	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	-0.45	---	---
SET:	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	-0.45	---	---
LAST:	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	-0.45	79.56	---
START:	0.63	4.79	1.19	-0.50	0.31	-0.07	3.73	-4.83	-1.00	-1.68	0.34	0.55	79.43	---
1	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	0.32	0.22	0.67	83.74	---
2	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	-0.45	79.56	---
3	0.51	4.55	0.95	1.50	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	0.67	78.56	---
4	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-2.00	-1.92	0.22	0.67	77.83	---
5	0.51	4.55	3.19	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	0.67	75.49	---
6	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-2.83	-0.88	-1.92	0.22	0.67	75.35	---
7	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	1.34	0.67	75.26	---
8	0.94	5.41	1.81	0.12	0.00	0.55	3.11	-4.21	-1.31	-1.06	0.65	0.24	74.38	---
9	0.51	6.79	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	0.67	72.85	---
10	0.51	4.55	0.95	-0.74	0.43	-0.31	1.73	-5.07	-0.88	-1.92	0.22	0.67	72.78	---
11	0.51	4.55	0.95	-0.74	0.43	1.93	3.97	-5.07	-0.88	-1.92	0.22	0.67	71.01	---
12	0.51	4.55	0.95	-0.74	-0.69	-0.31	3.97	-5.07	-0.88	-1.92	0.22	0.67	70.75	---
13	1.63	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	0.67	63.94	---

Start  
(Center  
of Mass)  
79.43%

Best  
83.74



17<sup>h</sup>56<sup>m</sup>0<sup>s</sup>  
11/30/2007

Green Ratio (%): 79.5598

Simplex Volume: 13.9162

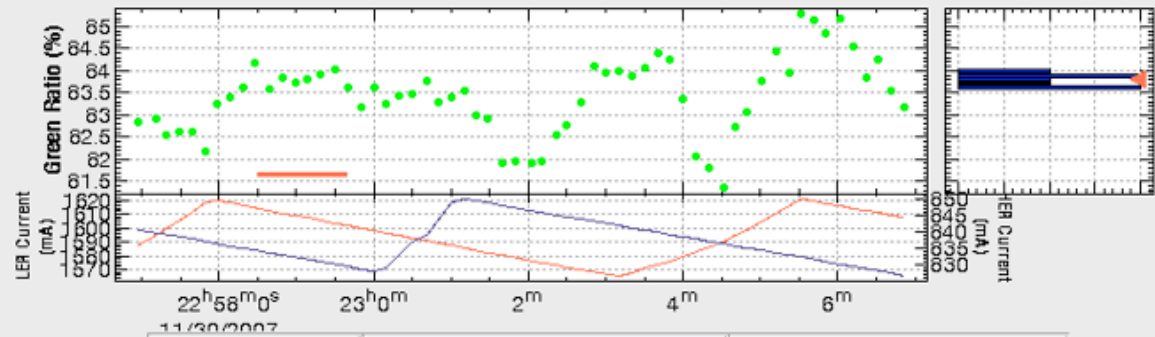
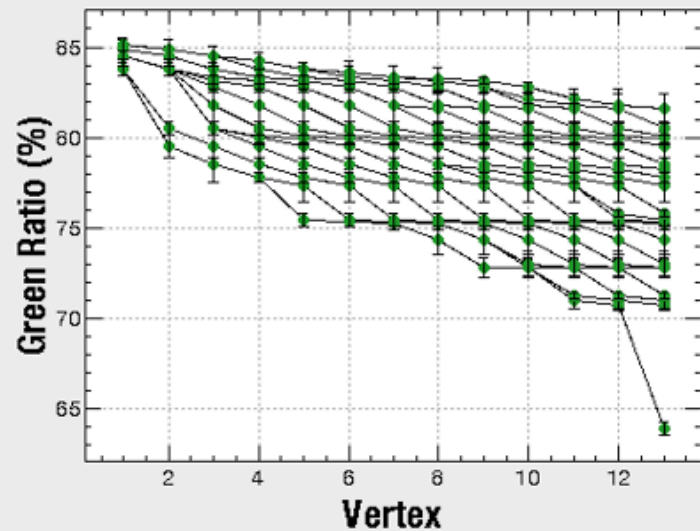
# Luminosity Optimization (11/30)

## Current Simplex (List View)

<< Double click each line to set knob >>

#	R1L	R2L	R3L	R4L	EYL	EPYL	R1H	R2H	R3H	R4H	EYH	EPYH	$\sigma^2_{YHER}$	Time
NEXT:	0.39	4.35	1.34	-0.61	0.19	-0.08	4.51	-4.05	-1.29	-0.08	0.97	0.40	---	---
SET:	0.40	4.36	1.31	-1.65	0.20	-0.10	4.47	-4.13	-1.26	-0.22	0.91	-0.18	---	---
LAST:	0.46	4.77	1.45	-0.88	0.22	-0.01	5.21	-4.28	-1.23	-0.75	0.73	0.09	83.80	---
START:	0.63	4.79	1.19	-0.50	0.31	-0.07	3.73	-4.83	-1.00	-1.68	0.34	0.55	79.43	---
1	0.40	4.36	1.31	-1.65	0.20	-0.10	4.47	-4.13	-1.26	-0.22	0.91	-0.18	85.16	---
2	0.41	4.39	1.50	0.79	0.18	-0.11	4.41	-4.79	-0.34	-0.39	0.76	-0.10	84.83	---
3	0.51	5.19	1.59	-0.10	0.23	0.09	5.95	-4.43	-1.20	-1.28	0.54	0.35	84.50	---
4	0.38	4.33	1.37	0.43	0.17	-0.07	4.55	-3.98	-1.32	0.06	1.03	0.99	84.19	---
5	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	0.32	0.22	0.67	83.74	---
6	0.47	3.63	1.41	-0.06	0.25	-0.02	4.17	-4.41	-1.18	-1.00	0.63	0.31	83.56	---
7	0.39	4.30	1.31	0.46	0.71	-0.25	4.46	-4.94	-1.48	-0.72	0.63	0.07	83.31	---
8	0.24	4.73	1.22	-0.21	0.31	-0.05	3.95	-4.57	-1.09	-1.10	0.56	0.38	83.22	---
9	0.49	4.52	1.16	-0.33	0.31	-0.24	4.07	-5.30	-1.09	-1.51	0.89	0.46	83.10	---
10	0.45	4.47	-0.53	0.39	0.10	-0.13	4.25	-4.88	-1.44	-0.79	0.71	0.11	82.75	---
11	0.40	4.58	0.58	-0.20	0.38	0.90	4.39	-4.63	-0.97	-0.40	0.76	0.33	82.17	---
12	0.71	4.95	1.58	-0.11	0.16	0.14	3.61	-4.44	-1.20	-1.29	0.54	0.35	81.82	---
13	0.46	4.45	0.34	-0.20	0.50	-0.27	4.17	-2.95	-0.74	-1.38	0.70	0.40	81.59	---

5th  
Best  
83.74



11/30/2007

Initialize Simplex

**Stop**

Knob Ready

Simplex: **Shrink 3**

Set Knob for the next point

Start Data Taking

Green Ratio (%):

Accept Data

Hold Auto Accept

Cancel & Restart Data Taking

Set Knob Again

Set Best Knob

Set Start Knob

Set Center of Mass

Simplex Volume

.1087

# $\sigma_y^*$ Minimization

Optimize Load Simplex Load Vertex Settings

List View Graphic View **Current Simplex (Graphic View)**

#1 'fs'n'u'dyLER'n -2.3709

16h22m0s 11/23/2007

Initialize Simplex **Set Knob for the next point** Cancel & Restart Data Taking

**Stop** Start Data Taking

Knob Ready

Simplex: Reflect

$\sigma_{yLER}^*$  ( $\mu\text{m}$ ): 2.2881

Accept Data

Hold Auto Accept

Set Knob Again

Set Best Knob

Set Start Knob

Set Center of Mass

Simplex Volume .3956