Geometry Model Comparison

- Old xmlGeoDbs tag v1r37p1 has homogeneous cylindrical “spacecraft”
- Newest tag v1r39p3 has spacecraft consisting of several components. Also has additions to LAT mass (mechanical and electrical components).
- Solar panels are unchanged

Component Comparison

Moving from old model to new

- eliminate 1000 kg cylinder
- add radiators, LAT electronics, XLAT plate to LAT (330 kg)
- add spacecraft components primary structure, skirt, optical bench, propellant and tank, batteries (about 850 kg)
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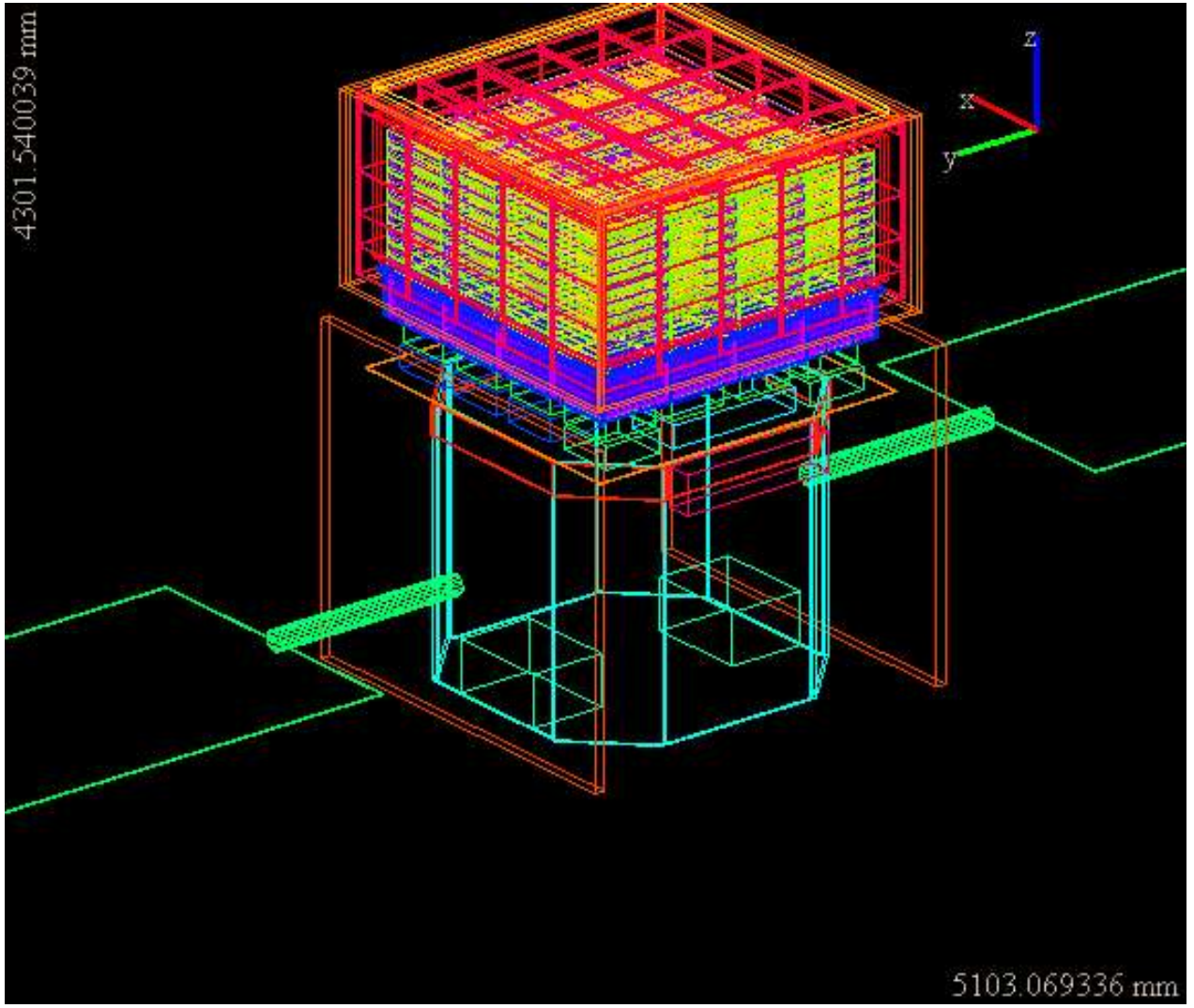
	LAT	Solar panels	Other spacecraft
v1r37p1	2040	267	1000
v1r39p3	2373	267	850
actual	2788		

v1r39p3 Geometry



Batteries are boxes near +Y and -Y sides of SC, inside primary structure.

Orange panels are radiators

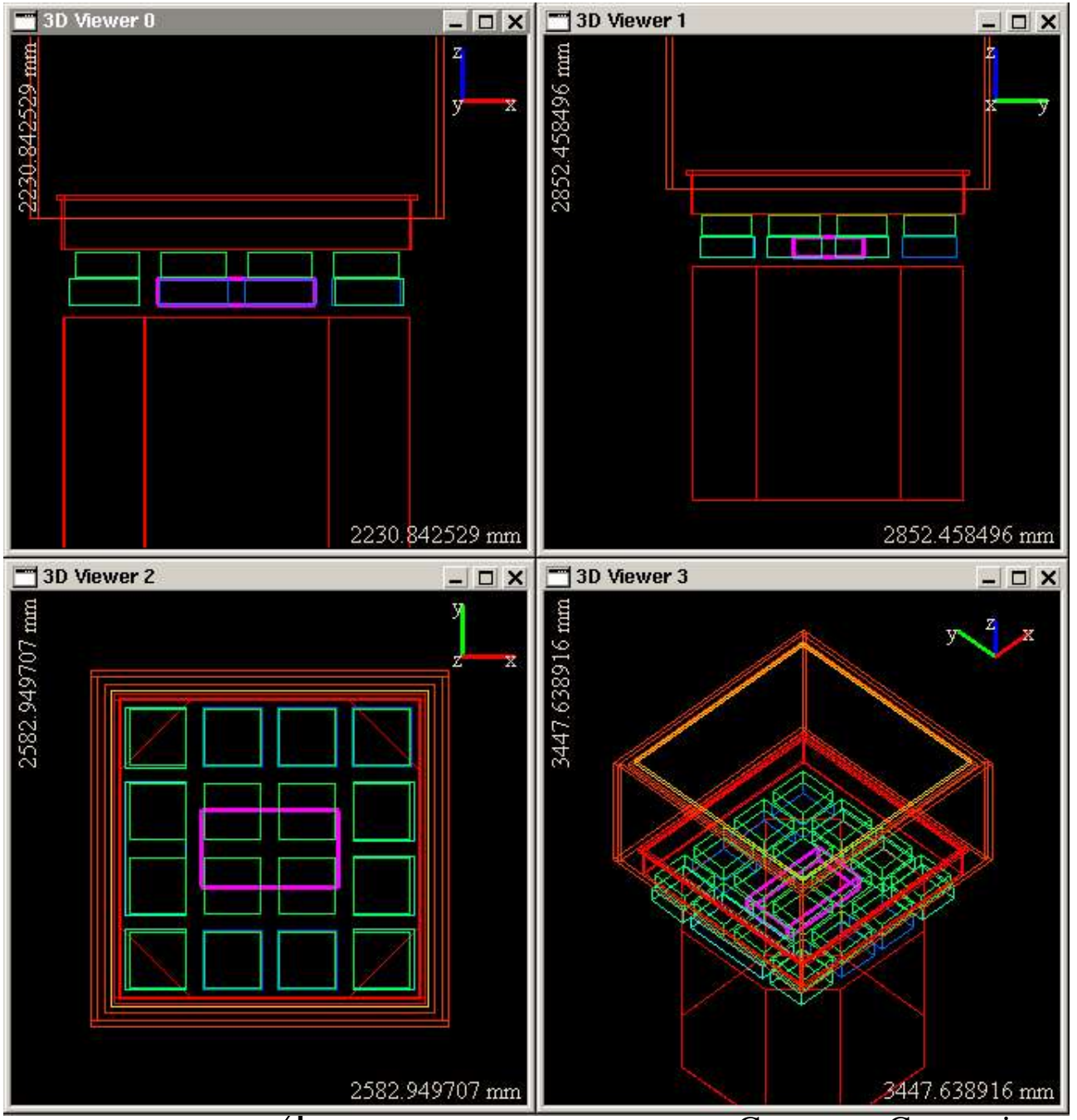
Optical bench is red box just outside -X side of primary structure, near LAT

Hydrazine tank is not visible. It's just above batteries.

LAT shell

+ electronics

+ prim. struct.



LAT Mass Comparison

Subsystem	Measured/calc mass	Simulated mass	Meas - Sim	% Diff
TKR	524.487	453.701	70.786	13.5
CAL	1381.731	1310.580	71.151	5.1
ACD	281.633	153.839	127.794	45.4
Mech	351.546	233.616	117.93	33.5
DAQ Elec	242.469	220.254	22.215	9.2
TOTAL	**2788.966**	**2371.99**	**416.976**	**15.0**

Known missing

BEA

See also

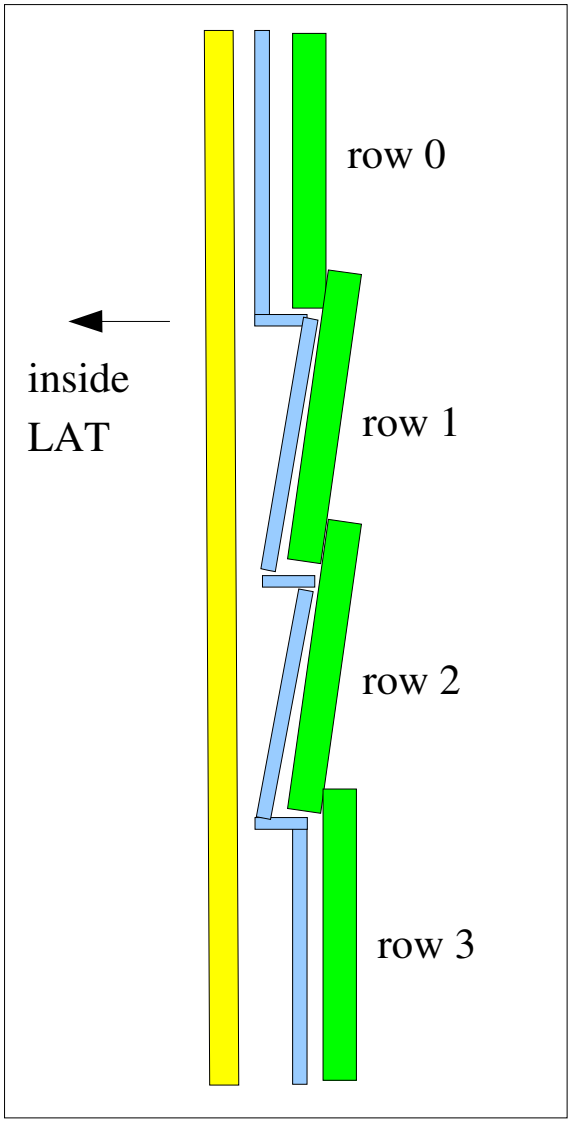
http://www.slac.stanford.edu/exp/glast/ground/LATSoft/geometry/notes/massSummary.shtml

Geometry laundry list

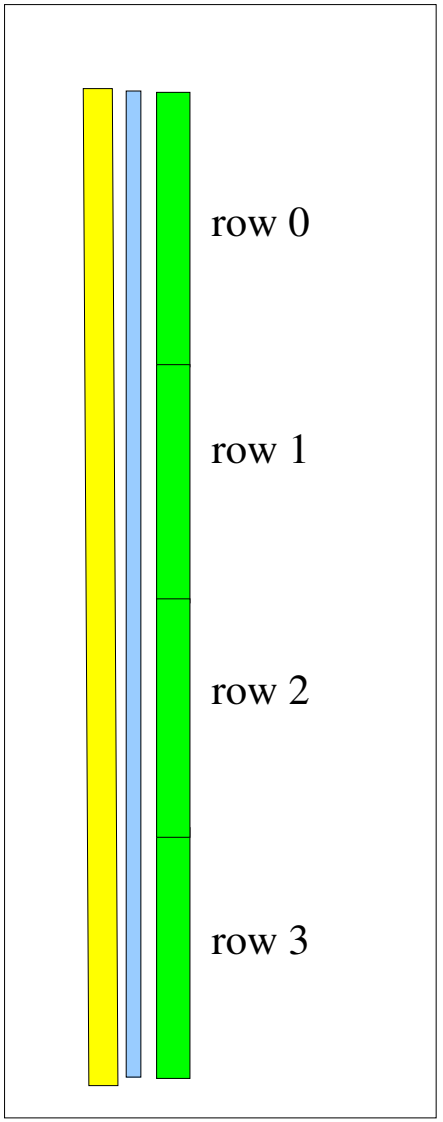
- *B4* More SC volumes (GBM, SC electronics boxes, reaction wheels)
- *B3* ACD base frame and electronics assembly. Would account for about ½ of missing ACD mass
- *B2* ACD screws and holes (overly symmetric acceptable?)
- *B1* ACD side shingling
- *B6* Better TKR tower model.
- *B5* Better grid (current one is too light)

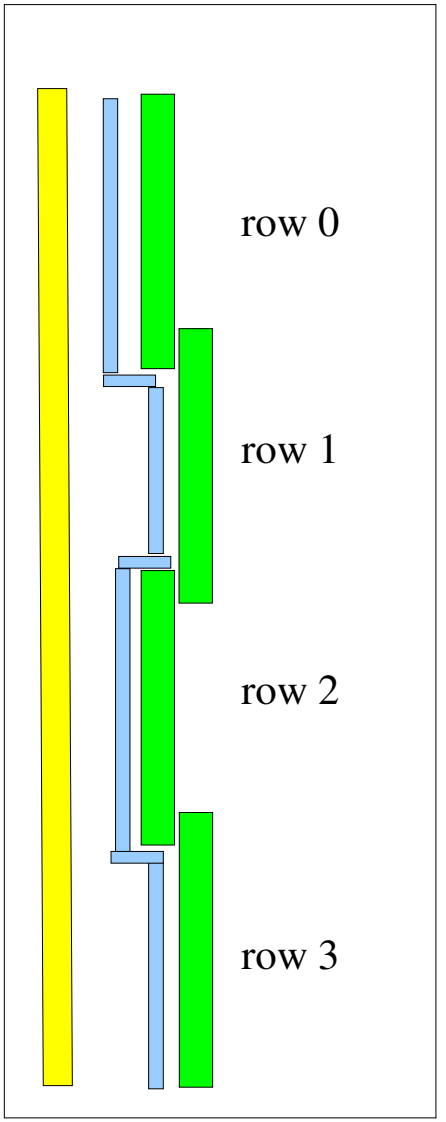
Side Shingling

Actual shingling.
Rows 1 & 2 slanted



Current model. No
slant, no shingling





Shingling without slant. This might be easier to implement.

Is it good enough?