VTP file with spd from a single PNP h5 file

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This file: pnp\_vtp\_file\_generation.docx

This file shows how to generate a VTP file that contains the surface power density on an arbitrary grid of rectangles, e.g. that provided by SPARC engineers.

sscott@cori10:/project/projectdirs/m3195/ascot/mypython> toruns

… runs> python $dir\_mypython/export\_single\_pnpfile\_vtp.py

Enter name of hdf5 file with prompt and nonprompt losses: ( default=) ascot\_59382525.h5

Enter total prompt power loss (kW) ( default=0.0) 317

Enter total nonprompt power loss (W) ( default=0.0) 71

Time to separate p and np losses [sec] ( default=3e-05) <cr>

export\_single\_pnpfile\_vtp:

filename with p + np losses: ascot\_59382525.h5

prompt power loss [kW] = 317.0

nonprompt power loss [kW] = 71.0

nonprompt loss start at time = 3e-05

... Your output file will be ascot\_59382525.vtp

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... total reconstructed lost power (MW): 0.3880

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ii spd (MW/m2) (top 20)

0 2.5126

1 2.4190

2 2.3707

3 2.3328

4 2.1857

5 2.1140

6 2.0649

7 1.9991

8 1.8439

9 1.8274

10 1.7908

11 1.7253

12 1.6889

13 1.6878

14 1.6840

15 1.6797

16 1.6735

17 1.6466

18 1.6334

19 1.6218

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Creating VTK points from triangle vertices.

Points: 2220603, Triangles 4822490

Creating VTK triangles referencing the points.

Combining the points and triangles to a single VTK PolyData datastructure.

Creating a VTK array representing "Triangle index" and attaching it to the VTK PolyData.

Creating a VTK array representing "Wall load (W/m^2)" and attaching it to the VTK PolyData.

Writing "ascot\_59382525.vtp".

I am done ...

(takes a minute or two for 5 million triangles)