Downstream SLS Data Usage

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CREATE
Computational Research and Engineering Acquisition Tools and Environments

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Outputs we look at

- **Surface Grid**
  - **Used for lineloads** - Deliverable
  - Happy its separate from near body volume
  - Quality Check
    - Compare to wind tunnel pressure measurements
- **Integrated forces (coeff.dat)**
  - Quality Check
    - Check stationarity
    - Compare to wind tunnel
- **Cartesian Volume – plot3d**
- **Cartesian Slices – vtk**
- **Near body Volume – tecplot**

Post Processing Tools

- **Tecplot**
  - Mostly for visualization
- **Python**
  - Heavy use of pytecplot for file IO
  - PCLAM to get distributed loads
  - Matplotlib for some line plotting
- **Shell scripting**
- **Matlab**
  - On the rare occasion

Friction Points

- **perIter.log**
  - If we restart, it doesn't line up nicely
  - Used extensively when doing computational cost comparisons
- **BodyTracking/vehicle/coeff.dat vs centerbody/coeff.dat**
  - Extra layer is annoying

Wishlist

- **Conditional output**
  - Significant temporal variation
  - Would like to capture flow state at max/min loading
    - Either lots of outputs or trying to get lucky

- **Surface data without connectivity**
  - Our surface files have about 2 million cells
    - Frequent outputs means we can have 200+ files
  - But also don't want a new file format 😅