Isakson Engineering Approach

- Will use a Hybrid Physics/Machine Learning Approach

- Physics Models can accurately predict system parameters with completely accurate data – But this data will have statistical uncertainty. Those statistical errors can lead to statistical errors in the results (occasionally very large errors). These models will also predict data that is in error (to some degree) and will detect large topology changes. If those changes (and errors) are left in, the results will normally show situations that are not possible.

- Machine Learning Models can do very well when presented with near infinite, broad situation data to learn from. However, when the data is limited, the interpolation is usually less accurate than a Physics based model and if the data is not sufficiently broad to cover all situation equally, a bias can occur in the results.

- A hybrid approach can often provide the best of both worlds, including more accurate interpolation and better handling of redundant and statistical data.