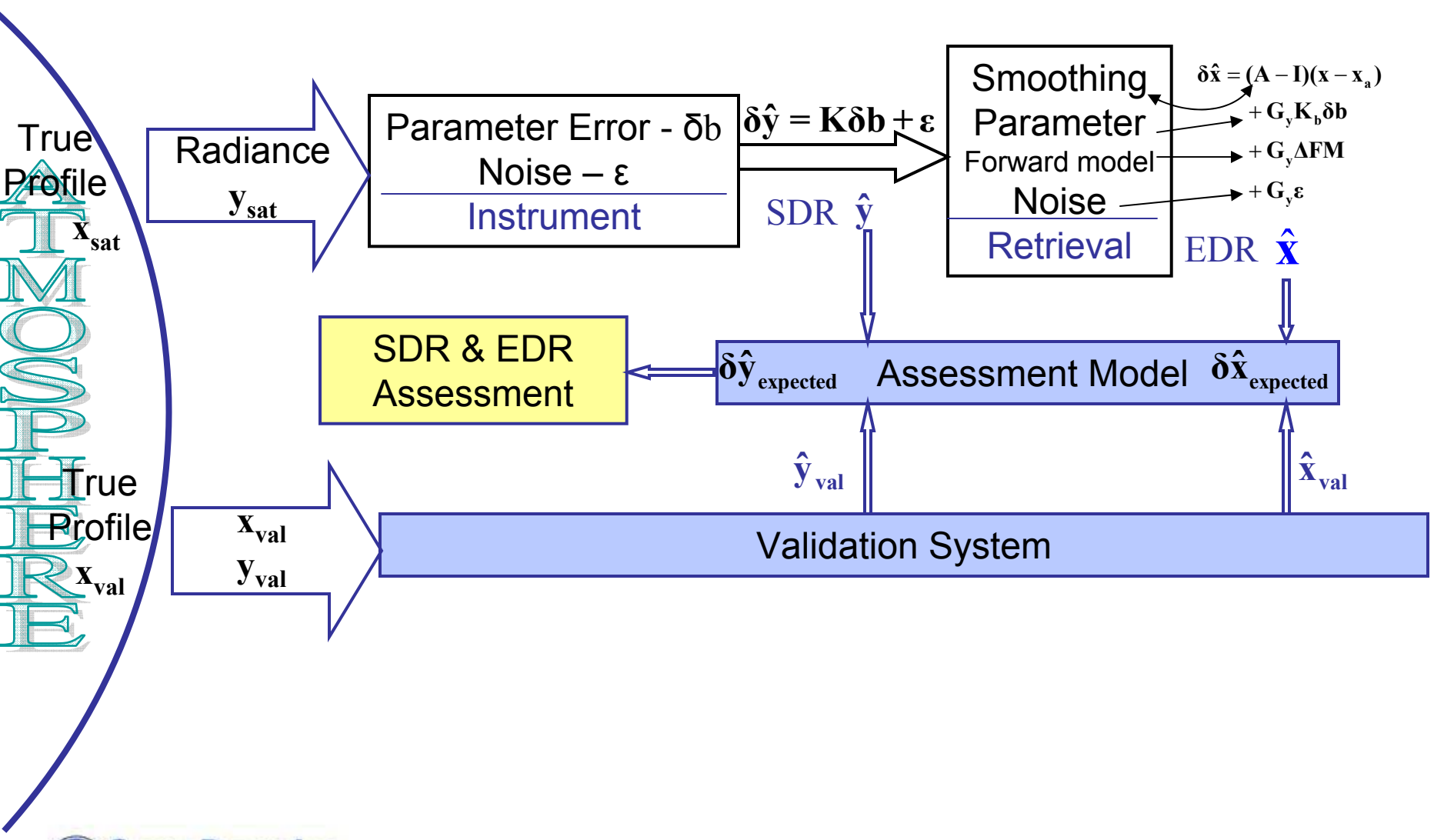
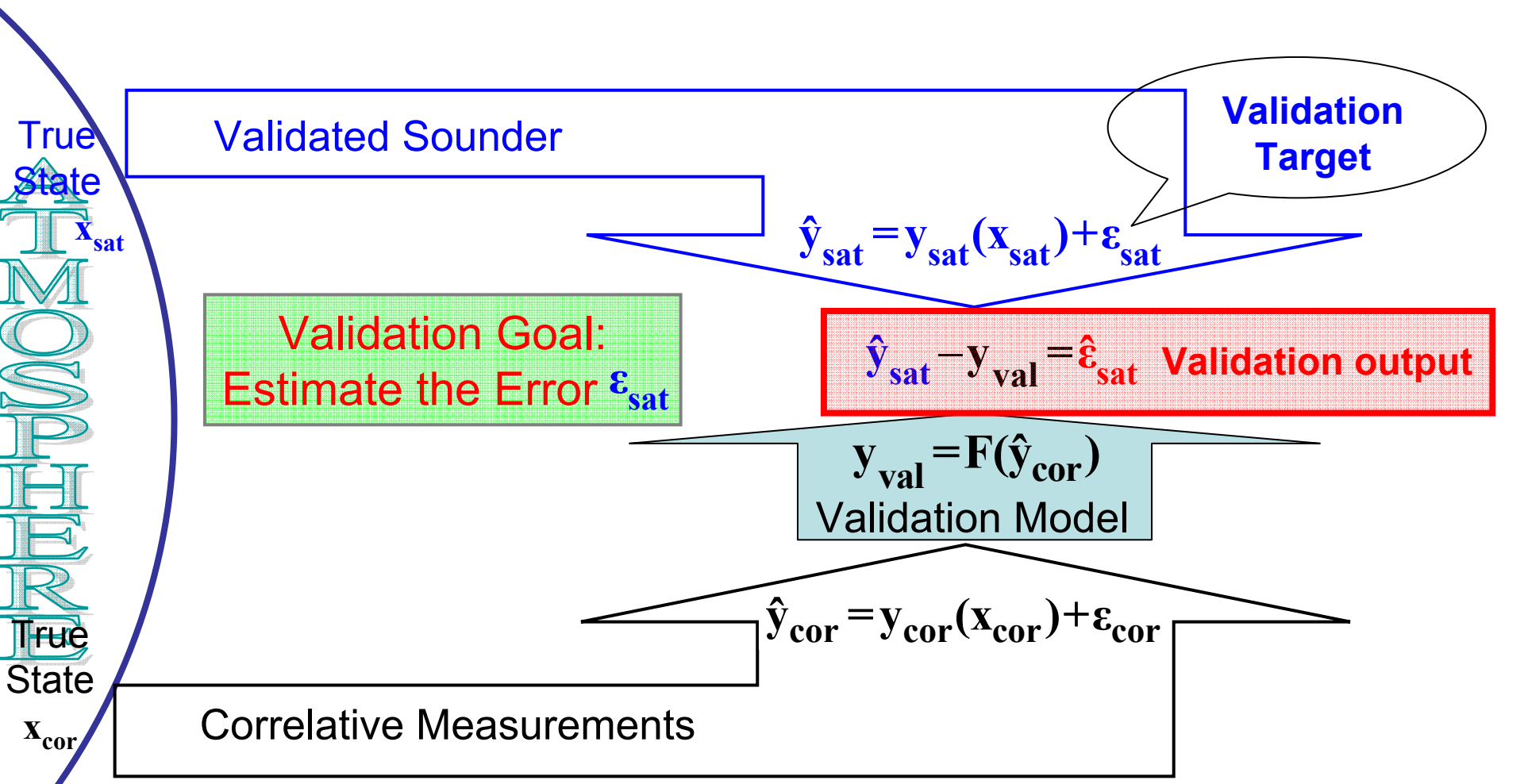
End-to-End Error Modeling
Signal, Retrieval and Validation



Validation by Correlative Measurements



Validation Issues

Why do We Need Validation Model

Why We Can NOT Use Correlative Data As Is

- Characteristic Difference– validated sounder and correlative measurements sample atmosphere differently.
- State Non-Coincidence – correlative measurements are at different time and location.

Validation Model reconciles the issues by providing optimal linear estimate of the expected satellite measurements and assessing the errors

$$y_{val} = B\hat{y}_{cor} = y_{sat}(x_{sat}) + \varepsilon_{val}$$