Information-centered representation of retrievals with limited degrees of freedom for signal: Application to methane from the Tropospheric Emission Spectrometer

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Motivation

Resolve a difference between two well known atmospheric scientists on the TES team as to how to resolve the latitudinal discontinuities in thelevel retrievals associated with the *a priori* and constraint matrices on global maps.

Position 1 (strongly held): Adopt a globally uniform prior

Position 2 (likewise):   a smoothly varying prior

{The DOFs at each retrieval level for methane is ~0.05!}

Concept

Move to a representation in which the number of elements in the reported product is consistent with the number of degrees of freedom for signal in the retrieval

Relevance to IASI