Theoretical Simulations of ADMs based on Sigmoidal Fits

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Approach

• Use existing theoretical calculations for realistic cloud scenes from Landsat to assess the use of the proposed parameter
Concept

From SHDOM have:
- computed radiances
- computed flux

1. \( F^{\text{SH}}(\theta_0) \)
2. \( I^{\text{SH}}(\theta, \phi; \theta_0) \)

From fit:
- \( F^F = \Sigma I^F \)
- \( \text{ADMF}^F = \pi I^F/F^F \)

Predict:
- \( F^P = \pi I^{\text{SH}}/\text{ADMF}^F \)
\[ \phi = 0^\circ \quad \Theta_0 = 75^\circ \]
Status

• $F^{SH}$ and $F^F$ agree quite well
• Increasing RMS difference for $F^P$ with $\theta_0$
• Sigmoidal fit breaks down at some angles
  – No correlation to typical cloud props
  – Suggests great sensitivity to cloud geometry
  – Needs further study