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Spectral information divergence for hyperspectral image analysis

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The authors propose an information theoretic criterion, called spectral information divergence (SID) for spectral similarity and discriminability. It is derived from the concept of divergence arising in information theory and can be used to describe the statistics of a spectrum. Unlike spectral angle mapper (SAM) which extracts geometric features between two spectra, SID views each pixel spectrum as a random variable and then measures the discrepancy of probabilistic behaviors between two spectra. In order to evaluate SID, SAM is used for comparison via hyperspectral data. Experimental results show that SID can characterise spectral similarity and variability more effectively than SAM

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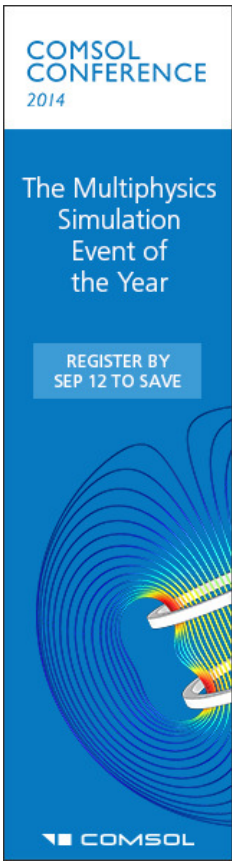

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