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The Madden-Julian oscillation (MJO) is characterized through statistical analysis of the moist static energy (MSE) budget in MERRA reanalysis data. 20 years of daily data for all longitudes in a latitude band of 10°S-10°N are used. A wavenumber-frequency coherence spectrum of column-integrated MSE and its net source (surface fluxes plus column-integrated radiative heating) shows a peak in the region corresponding to the MJO, but not in convectively coupled Kelvin waves. In addition, MJO composite Hovmoeller diagrams show the MJO as an eastward propagating MSE anomaly, which speeds up near 180°E, becoming Kelvin-like over the Eastern Pacific cold tongue. These results are consistent with the notion of the active phase of the MJO as a moisture mode, destabilized by surface fluxes and cloud-radiative feedbacks.