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Potential of equatorial Atlantic variability to enhance El Niño prediction

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The El Niño/Southern Oscillation (ENSO) dominates interannual climate variability around the globe. Current seasonal forecast systems derive their skill from its predictability. These systems, however, exhibit limited skill when predicting variations across boreal spring. Equatorial Atlantic climate also exhibits variations similar to ENSO that are potentially predictable. Studies based on observations and models of reduced complexity indicate that these variations, which peak in boreal summer, may influence ENSO. Here we show, through experiments with a complex climate model, that interannual fluctuations in Atlantic SST (1) influence ENSO, (2) may partly explain its irregularity and skewness, and (3) have the potential enhance its prediction across boreal spring.