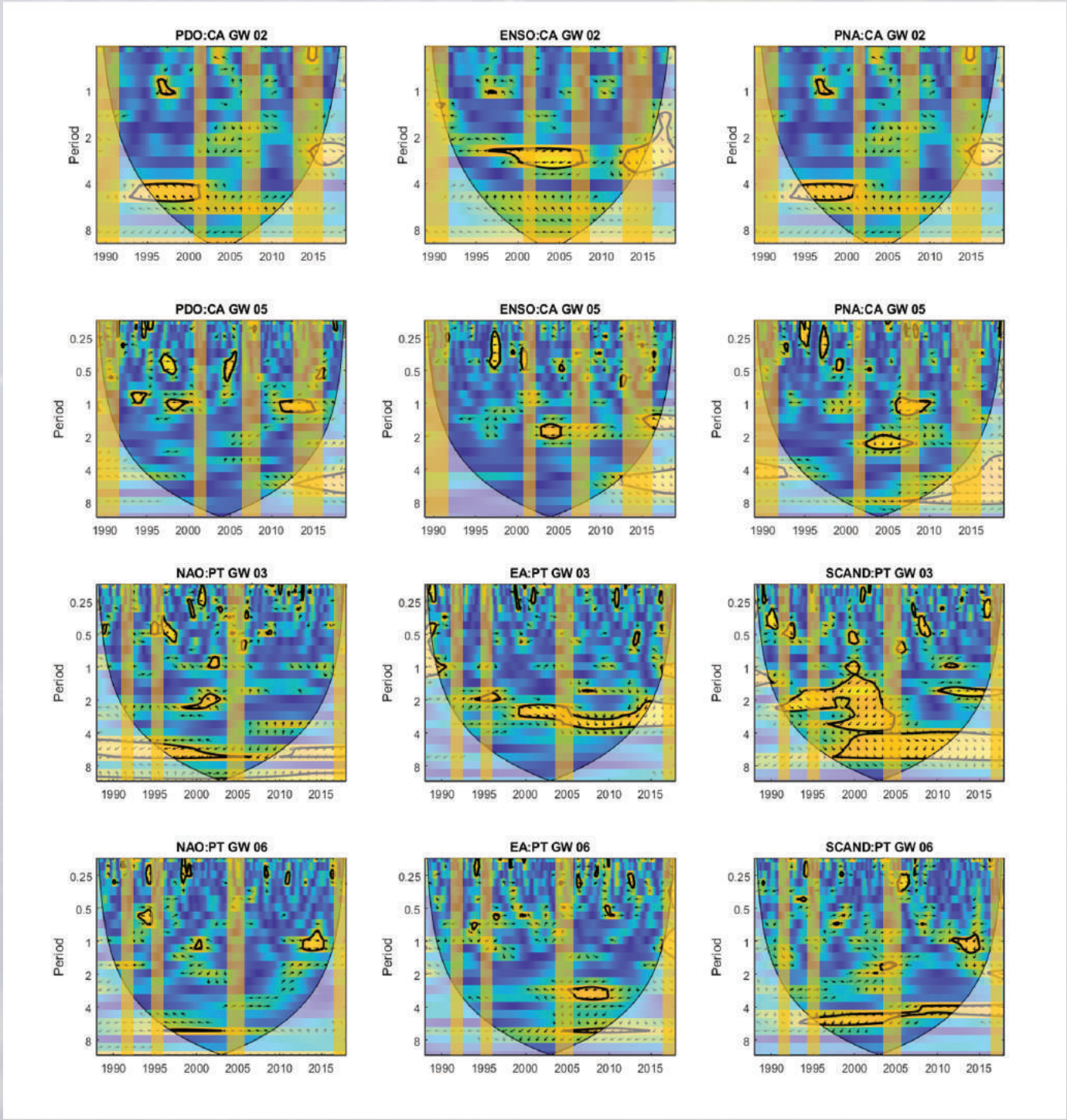
SOLID EARTH SEMINARS

COASTAL GROUNDWATER RESPONSE TO CLIMATE VARIABILITY COUPLING IN CALIFORNIA AND PORTUGAL



WHAT'S THIS ABOUT?

ZOOM

Aquifers are a fundamental source of fresh water, yet they are particularly vulnerable in coastal Mediterranean regions due to climate and anthropogenic pressures. Examining the interrelationships between ocean-atmosphere teleconnections and groundwater levels in coastal aquifers of California and Portugal reveal information pertinent to securing future groundwater resources. Piezometric and climate indices (1989-2019) are analyzed using singular spectral analysis (SSA) and wavelet transform methods. SSA identifies signals consistent with the dominant climate patterns.

Lower frequency oscillations have a greater influence on hydrologic patterns, with the Pacific Decadal Oscillation (52.75%) and the North Atlantic Oscillation (46.25%) on average accounting for the largest amount of groundwater level variability. Wavelet coherences show non-stationary covariability between climate patterns and groundwater levels in distinct period bands and also show that coupled climate patterns are associated with major drought periods.

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https://videoconf-colibri.zoom.us/j/89018419156

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