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UC SANTA BARBARA
Department of Earth Science

Earth Science Colloquium

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Subducted seamounts: field examples and implications for the seismogenic zone

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Large-scale ocean-floor topographic anomalies, such as seamounts, are for the most part subducted with the downgoing plate. They are expected to critically impact the mechanical and seismogenic behavior of subduction zones, but their exact role remains debated: in particular, do they act as barriers to earthquake propagation or as asperities facilitating earthquake nucleation? While seismic imaging of the internal deformation of currently subducted seamounts is beyond reach, a few examples have been underplated and exhumed. I will here present two field examples (in the Zagros ranges and in the Franciscan complex), from their formation on the seafloor to subduction and metamorphism at ~30 km depth, and show the characteristics of strain localization in these units. I will then discuss their potential seismogenic behavior.