

**CGU_S_03: The structure and dynamics of western North America:
Setting the stage for CCArray and EON-ROSE**

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Session Description

The North American Cordillera and adjacent continental craton have been built and modified by a long history of tectonic events including episodes of plate rifting, subduction, terrane accretion, and mountain-building. The result is a complex collage of lithosphere fragments that continue to experience deformation and modification. Unravelling the evolution of this region remains a challenge, with a number of unresolved issues. These include the details of Cordillera accretion and orogenesis, the roles of inherited structures and gravitational lithosphere thinning in past and ongoing deformation, and the mechanisms of craton construction, modification and stabilization. This session seeks contributions that address the present-day structure and the dynamic processes that have shaped western North America based on a range of approaches, including seismology and other geophysical methods, structural geology, geodesy and geodynamic modelling. We particularly welcome studies that cross disciplinary boundaries and those that link lithosphere dynamics with processes occurring at the Earth's surface and the deeper mantle. Through this session, we aim to stimulate discussions of research directions to be pursued via CCArray (Canadian Cordillera Array), the first component of the planned Canada-wide EON-ROSE initiative (Earth-System Observing Network / Réseau d'Observation du Système Environnemental).

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Joint Session Submission: ES-SSA, CIG