"How do Plateaus Grow? Climate and Tectonics of the Puna Plateau, NW Argentina"

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Abstract:

Why is there a plateau in the Central Andes, and how did it get there? Although there is a long history of convergence (and some extension) along the Andean margin, it is a non-collisional orogen, so there isn't a single, obvious cause for creating its high elevation and low relief. In this talk I will present a survey of the work of my group and others over the last 15 years, exploring the history and formation mechanisms of the Puna Plateau in northwest Argentina. I'll review evidence for crustal thickening, and in particular whether it is the result of propagation of a thick-skinned orogenic wedge, out-of-sequence shortening within a broken foreland, or both. The Puna Plateau is also one of the original locations in which lithospheric foundering was proposed. I'll review evidence for removal of mantle lithosphere and lower crust in both the northern and southern Puna, including our recent structural work and modeling work. Finally, I'll explore the role of surface processes in expanding and preserving the morphology of the plateau. It has been a joy for me to explore this part of the world with my students; I'm happy to share a where-are-we-now-and-what-do-we-think-we-know perspective with this group, looking for parallels with Canadian tectonics.

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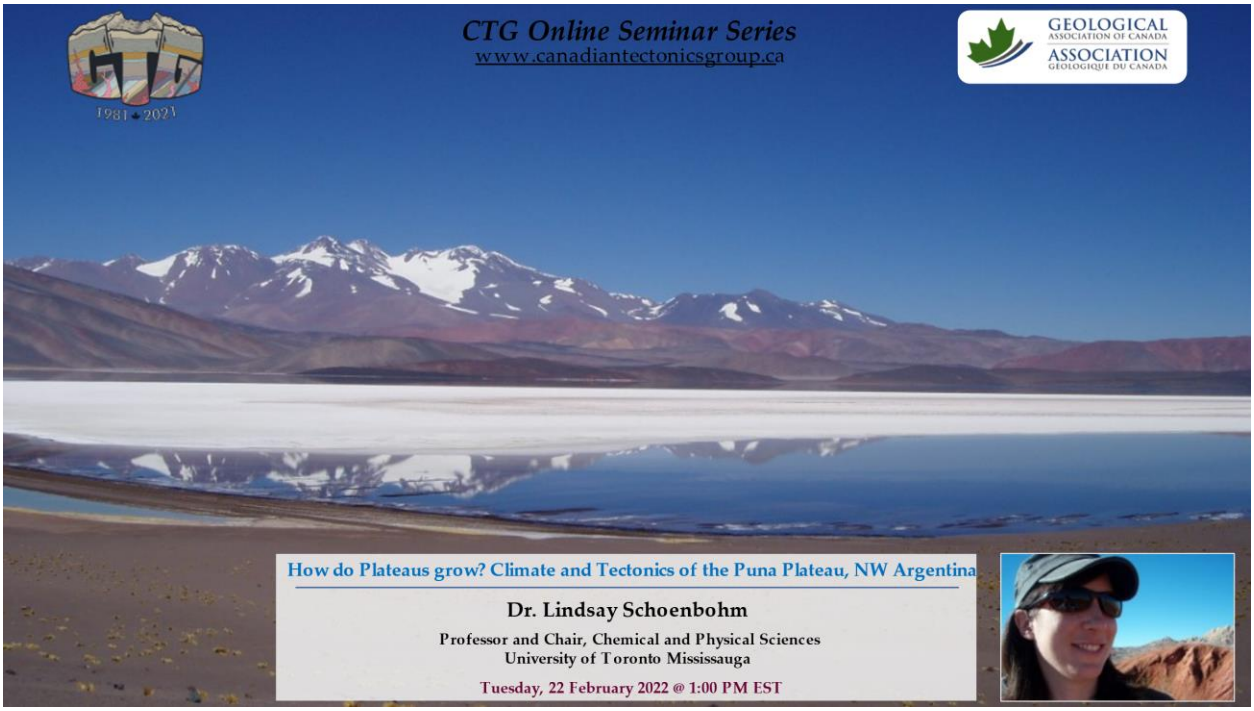
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