



Chemical & Physical Sciences
UNIVERSITY OF TORONTO
MISSISSAUGA

COLLOQUIUM

TUESDAY NOVEMBER 1ST, 2011
12:00 P.M. (SHARP) – 1:00 P.M.
INSTRUCTIONAL BUILDING 240

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“How Did Continents Begin?”

The plate tectonic revolution which began a half century ago solved some of the major puzzles of geology: why most mountains exist, why the ocean floor is so young, why the continents drift. But there are problems which plate tectonics sensu strictu does not solve. Why did a continental collision make Tibet so high? Why is their such massive lateral extension visible in the Basin and Range province of the US? How can plate subduction start, given the strength of cold rocks? These are present day problems, but there are also problems associated with the origin of modern tectonics. Arguments over when and how plate tectonics began have raged since the inception of the theory; given that no plate tectonics is visible on the other terrestrial planets, this is not a trivial argument between historians. The chemistry of modern continental crust is also hard to explain (oceans are easy). In this talk, I will discuss computer experiments demonstrating the likely rapid mechanical turnover of early earth's continental crust and its implications for continental crustal formation.