**Ben Knight**

PhD Candidate

School of Earth, Atmosphere and Environment,

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**Education**

**PhD Geodynamics, Monash University, 2017 - Present**

Thesis Title:*Insights into the evolution of orogenic wedges*

**MESci Exploration and Resource Geology, Cardiff University, 2012 - 2016**

Concentrations: Geodynamics, Geology, Geophysics   
MESci Dissertation:*A critical depth for self-sustaining subduction: Insights from thermomechnical modelling*   
Dissertation Advisor: Prof. J. Huw Davies, Cardiff University

**Publications**

* Knight, B.S., Capitanio, F.A., Weingberg, R.F., (*in preparation*), “Convergence history controls on the formation of the Tibetan Plateau and Himalayan Fold-and-Thrust belt”.
* Knight, B.S., Capitanio, F.A., Weingberg, R.F., (*in preparation*), “The evolution of orogenic wedges: From Coulomb plastic to viscous”.
* Knight, B.S., Davies, J.H., Capitanio, F.A. (*in review*), “Timescales of successful and failed subduction; insights from energy dissipation.” *Geophysical Journal International.*

**Conference presentations**

* Knight, B.S.., Capitanio, F.A., Weingberg, R.F., (*2020*). “Convergent rate controls on the evolution of Himalaya-Tibet”, GeoUtrect 2020, online.
* Knight, B.S.., Capitanio, F.A., Weingberg, R.F., (*2020*). “[The influence of viscoplastic rheology on strain localization in the crust](https://2020cigtectonics.figshare.com/articles/poster/BK-Strain_localization-CIG_pdf/12674222)”. CIG Tectonics Community Science Workshop, online.
* Knight, B.S.., Capitanio, F.A., Weingberg, R.F., (*2020*). “[Reconciling plate convergence and orogeny: The influence of convergence rate on the formation of the Himalayas](https://presentations.copernicus.org/EGU2020/EGU2020-904_presentation.pdf)”. EGU 2020, online.
* Knight, B.S.., Capitanio, F.A., Weingberg, R.F., (*2020*). “The influence of convergence velocity on orogenic fold-and-thrust belts: Insights from thermomechanical modelling”. 36th IGC, New Delhi, India.
* Knight, B.S., Davies, J.H., Capitanio, F.A. (*2018*). “Incipient subduction dynamics: Insight from energy partitioning.”. 31st VUEESC 2018, Melbourne, Australia.

**Conference Organization**

* Convener - 31st Victorian universities Earth and environmental sciences conference (VUEESC), 2018.

**Grants and scholarships**

* Faculty of Science Dean’s Postgraduate Research Scholarship (Monash University, 2017)
* Faculty of Science Dean’s International Postgraduate Research Scholarship (Monash University, 2017)
* 36th IGC travel grant

**Numerical modelling experience**

* 1 year of running numerical models with Fluidity on various HPCWales & Quartz (based at Cardiff)
* 3 years of running 2D numerical models and 1 year running 3D models with Underworld on various HPCs (Monarch, Raijin, Gadi, M3)

**Relevant skills**

* Have helped set up various geological margins using Underworld, including collisional margins, subduction zones, continental rifting and mantle plume models using a Cartesian mesh.
* Highly skilled in Underworld feature development through the Python3 API. I have implemented a range of features, including material changes based on material properties, velocity and diffusion surface processes functions in 2D, variations in imposed velocity conditions in space and time.
* Strong understanding of python3 for data manipulation and analysis.

**Professional skills training**

* Attended various Underworld workshops and meetings.
* Attended an ASPECT coding course for geodynamic modelling.
* 60 hours of excellence in research & training completed. Includes various writing courses and computer coding classes.
* 60 hours of professionalism, career & innovation training completed. Includes training on networking and career development.

**Teaching experience**

* **Teaching Assistant, Monash University, 2018 -**
* Courses: Physics of the Solid Earth (3rd year), Environmental problem solving and visualization (2nd year), Earth, atmosphere and environment 1 and 2 (1st year). Including both online (via zoom) and in person teaching.

**Memberships**

* Geological Society of Australia (GSA)
* American Geophysical Union (AGU)
* European Geoscience Union (EGU)