

教學人員簡介

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學歷

香港科技大學，數學，博士，2011

中國科學院，天體物理，碩士，2006

中南大學，數學，學士，2003

教學領域

應用數學

基礎數學

研究領域

恒星及行星大氣

計算流體力學

應用數學

工作經歷

澳門科技大學，月球與行星科學國家重點實驗室，助理教授，2018.01年-現在

中山大學，數學學院，講師，2013.07-2017.12

香港城市大學，數學系，客席講師，2013.01-2013.05

研究項目

澳門科技發展基金，項目號0156/2019/A3, 2020, 主持

廣東省基礎與應用基礎研究基金，項目號2019A1515011625, 2019, 主持

廣州市科技計畫，一般專案，項目號201707010006，2017，主持

國家自然科學基金，青年基金，項目號11503097，2016，主持

專業資格認證及獎項

學術機構及社會任職

中國數學學會會員

學術成果

期刊文章：

- T.Cai, Penetrative convection for rotating Boussinesq flow in tilted f-planes, *The Astrophysical Journal*, 898, 22, (2020)
- T.Cai, Upward overshooting in turbulent compressible convection. III. Calibrate parameters for one-dimensional Reynolds stress model, *The Astrophysical Journal*, 891, 77, (2020)
- T.Cai, Upward overshooting in turbulent compressible convection. II. Simulations at large relative stability parameters, *The Astrophysical Journal*, 891, 49, (2020)
- T.Cai, Upward overshooting in turbulent compressible convection. I. Effects of the relative stability parameter, the Prandtl number, and the Peclet number, *The Astrophysical Journal*, 888, 46, (2020)
- T.Cai, Numerical analysis of nonlocal convection --- comparison with three-dimensional numerical simulations of efficient turbulent convection, *The Astrophysical Journal*, 868, 12, (2018)
- T.Cai, B. Hazari, J.T. Lai, and V. Mohan, Kaldorian disaggregation, temporary migration and welfare: theory and calibration. *Pacific Economic Review*, 23(2), 193, (2018)
- T.Cai, A Semi-implicit spectral method for compressible convection of rotating and density stratified flows in Cartesian Geometry, *Journal of Computational Physics*, 310, 342, (2016).
- T.Cai, V. Dang, and J.T. Lai, China's capital and 'hot' money flows: an empirical investigation. *Pacific Economic Review*, 21(2), 276, (2016)
- T.Cai, Numerical analysis of nonlocal convection, *Monthly Notices of the Royal Astronomical Society*, 443, 3703, (2014)
- T.Cai, K.L.Chan, 3D numerical simulation of convection in giant planets: effects of solid core size, *Planetary and Space Science*, 71(1), 125, (2012)
- T.Cai, K.L.Chan, L.C. Deng, Numerical simulation of core convection by a multi-layer semi-implicit spherical spectral method, *Journal of Computational Physics*, 230(24), 8698, (2011)
- T.Cai, Supersonic convection in stellar interiors, *Chinese Astronomy and Astrophysics*, 30, 284, (2006)

專著章節：

會議論文：

- K.L.Chan, T.Cai, H.P.Singh, Overshooting above a convection zone, *Proceedings of International Astronomical Union, IAU Symposium*, 271, 317, (2011)