

Wiltshire David L.

Position: Senior Lecturer, Department of Physics & Astronomy, University of Canterbury, Christchurch, New Zealand

Period covered: 29 July 2008 – 30 October 2008



I Scientific Work

Prof. Wiltshire completed work for two research papers during his three month visit to ICRANet. Both papers relate to his current program of investigating the possibility that effects attributed to dark energy and cosmic acceleration have their origin in a misidentification of gravitational energy gradients within the inhomogeneous structure of the universe, once structures form. This “radically conservative” solution to the problem of dark energy has begun to attract a reasonable amount of interest, and has already featured prominently in the popular press, with a cover feature in *New Scientist* in March, 2008.

2009 publications from work at ICRANet

D.L. Wiltshire, “Average observational quantities in the timescape cosmology”, *Phys. Rev. D* 80 (2009) in press; arXiv:0909.0749

D.L. Wiltshire, “From time to timescape: Einstein’s unfinished revolution”, *Int. J. Mod. Phys. D* (2009) special issue, in press; an essay for the FQXi 2008 Essay Competition on the Nature of Time, http://www.fqxi.org/data/essay-contest-files/Wiltshire_time.pdf

D.L. Wiltshire, “Gravitational energy as dark energy: Towards concordance cosmology without Lambda”, in *Dark Energy and Dark Matter: Observations, Experiments and Theories*, eds E. Pécontal, T. Buchert, Ph. Di Stefano and Y. Copin, EAS Publications Series 36 (2009) 91-98

D.L. Wiltshire, “Dark energy without dark energy: Average observational quantities”, to be published in *Dark Matter in Astroparticle and Particle Physics: Proceedings of the 7th International Heidelberg Conference*, eds H.V. Klapdor-Kleingrothaus (World Scientific, Singapore)

D.L. Wiltshire, “Gravitational energy as dark energy: Average observational quantities”, to be published in *Proceedings of the Invisible Universe Conference, Paris 2009*, ed J.M. Alimi (AIP Conference Series)