

DSc award for Derecke Palmer



In November 2014, Derecke Palmer received a Doctor of Science degree from the University of New South Wales. The DSc degree is awarded for a distinguished contribution to a field of science, and it is usually based on published works. In Derecke's case, the DSc was awarded for his distinguished contribution to near surface refraction seismology. Other distinguished Australian geophysicists who have received this award include Ken McCracken, Doug Finlayson, Stewart Greenhalgh and Terry Lee.

Derecke's contribution includes the traveltimes inversion algorithms, widely known as the generalised reciprocal

method (GRM) and full waveform methods with the refraction convolution section (RCS). The late Harold Mooney described the GRM as a generalisation from which most refraction methods can be derived, as well as a practical inversion method in its own right. Neil Goulty described the original SEG monograph in which the GRM was first published as a classic. Ken Lerner stated that Derecke's contribution extended beyond the GRM to include the full scope of data acquisition, processing and interpretation of refraction data. Don Steeples stated that Derecke's more recent work on full waveform methods will ultimately prove to be even more significant than the GRM from a scientific and engineering standpoint.

Derecke's contributions to near surface refraction seismology have been recognised previously by the ASEG with the Grahame Sands Award for Innovation in Applied Geoscience in 1992, and by the SEG in 1995 with the Reginald Fessenden Award 'for one of the most significant advances in refraction seismology in more than 50 years.'

Furthermore, the GRM and the RCS were included on the Exploration Geophysics – Petroleum Industry Timeline, which was

compiled as part of the 75th anniversary celebrations of the SEG. Derecke is the only Australian exploration geophysicist to appear in that comprehensive compilation.

Although the GRM has been included in most recent text books on exploration geophysics and within industry standard codes of practice, such as those of the ASTM, Derecke's contributions have not been without their critics. Criticism of both the GRM and the RCS, both of which were first described in Derecke's MSc thesis in 1976, started with the external examiners of that work. The 40-year controversy shows little indication of being resolved in the near future.

In recent years, Derecke's research has focussed on non-uniqueness and the need to recognise the fundamental differences between accuracy and precision. He also remains a passionate advocate of full waveform refraction methods. It seems likely that Derecke's contributions to near surface refraction seismology will continue into the foreseeable future.

The ASEG congratulates Derecke on a distinguished contribution to exploration geophysics.

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