Australian open access MT: AusLAMP and beyond

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SUMMARY

Australia boasts a world-class resource of publicly available magnetotelluric data. Its backbone is the Australian Lithospheric Architecture Magnetotelluric Project (AusLAMP) – a grid of long-period deployments spaced at ~55 km designed to image the lithospheric-scale electrical structure of the continent. Since being launched in late 2013, data have been recorded at over 1500 stations, covering approximately 50% of the Australian landmass. In addition to AusLAMP are numerous targeted, smaller-scale surveys, including profiles coincident with active seismic lines and dense grids of broadband MT stations in regions of special interest, such as those with significant mineralisation.

These datasets have been made possible by significant public investment through the federal and state geological surveys and through research grants, backed by a publicly funded pool of high quality long-period and broadband instruments. Critical to the success of these datasets has been close cooperation between universities and the state and federal geological surveys. Private industry has also been involved in data collection, in supporting the push for national-scale datasets, and in co-funding some surveys.

On this poster we present the current status of public MT data in Australia, showcasing the expansion of the AusLAMP array and highlighting some of the key inverse models that have been produced to date. The results from several dense, targeted surveys, including in the Cloncurry region in Queensland where 969

broadband MT stations were collected on a 2 km grid, are featured. In addition, we preview upcoming work, including WA MT which will extend the coverage of gridded lithospheric-scale MT into Western Australia. We also provide information on developments in how to access the data as both time series and transfer functions, including integration of open-source geophysical software into national high-performance computing resources.

Keywords: AusLAMP, Australia, continent-scale, lithosphere, open-access