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A new method for determining the fluid-absent solidus temperature in piston-cylinder experiments

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ABSTRACT

We describe a new piston-cylinder method for determining the fluid-absent solidus curves of geological materials. Samples are heated incrementally at pressures from 3 to 20 kbar for periods less than one hour. The effects of melting on the measured oil pressure are small but detectable and yield an accurate solidus by interpretation of pressure-time data. The technique successfully reproduces the solidus curve for LiCl. Results for the Ollo de Sapo pelitic gneiss are superior to those obtained previously using a more conventional technique.