Report

Pressure dependence of exchange pathways in Sr2CuB2O6 Experimental report

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Instrument: <SPODI>, <30.8-3.9.2006>

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We performed a powder diffraction experiment at room temperature on SPODI using a Paris-Edinburgh type high-pressure cell. The Sr2CuB2O6 powder sample, about 50 mm3 in volume, was mixed with pressure transmitting medium methanol-ethanol (4:1), in a zero-matrix TiZr gasket. With Boron nitride anvils we where able to measure the diffraction pattern at hydrostatic pressures of 2 and 4GPa, corresponding respectively to a load of 26 and 35 tons on the pressure cell. The high pressure diffraction set up has been described in [1]. While going up to higher pressures, the gasket broke at a load of about 70 tons. The data obtained at zero pressure, 2 and 4GPa are currently being analyzed, and a diffraction pattern is presented in the figure below corresponding to 30hours counting time.

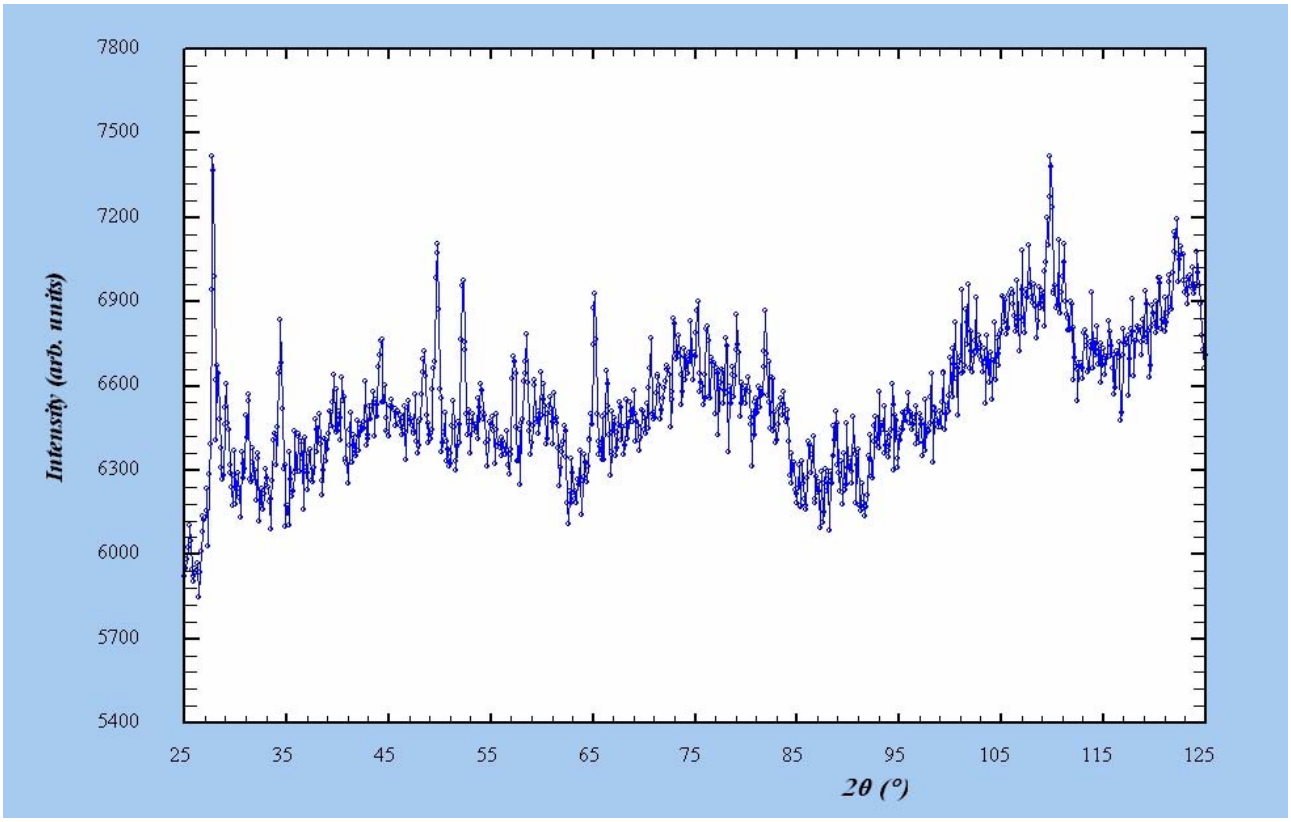

Fig.1. Diffraction pattern of Sr2CuB2O6 at 2GPa after 30hours.

[1] S. Klotz et al APPLIED PHYSICS LETTERS **86**, 031917 (2005)