

COLLOQUE DE PHYSIQUE EPFL

EPFL PHYSICS COLLOQUIUM

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Room CE3

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High temperature conventional superconductivity



We found superconductivity with $T_c=203$ K in hydrogen sulfide at high pressures. This is record value for the critical temperature superconductivity. This is conventional superconductivity, i. e. it is described by the Bardeen-Copper-Schriffer (BCS) theory, in contrast to cuprates – high temperature superconductors. The superconductivity has been proved by observation of zero resistance, Meissner effect, and isotope effect. X-ray diffraction studies confirm predicted cubic structure of the superconductive phases.

We will present recent results on further study of the superconductivity in hydrogen sulfide and other hydrides, compare the experimental results with available theoretical calculations, and will discuss prospects for further increasing of the critical temperature of superconductivity.

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