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Non-centrosymmetric superconductor $La_3Bi_4Pt_3$ GABRIEL SEYFARTH, UCI & UdM, CIGDEM CAPAN, UCI, ANDREA BIANCHI, UdM, ZACHARY FISK, UCI, PIERRE RODIERE, CHRISTINE OPAGISTE, Institut Neel, Grenoble — Recently, we have discovered that the metallic $La_3Bi_4Pt_3$ ($Y_3Au_3Sb_4$ structure) becomes superconducting below a transition temperature T_c of about 1.4K. Our interest in the superconducting phase of $La_3Bi_4Pt_3$ stems from the fact that it lacks a center of inversion, which may lead to unconventional superconductivity, including nodes in the superconducting gap function, even if the pair wave function exhibits the full spatial symmetry of the crystal. Compared to other non-centrosymmetric *magnetic* compounds in which superconductivity has recently been discovered, like $CePt_3Si$, UIr, $CeRhSi_3$ (under pressure), the nature of the superconducting state in $La_3Bi_4Pt_3$ is not complicated by strong electron correlations nor the coexistence of magnetism. This makes it a good model system to study superconductivity without inversion symmetry. In our presentation we will focus on the first basic characterization of our $La_3Bi_4Pt_3$ single crystals (X-ray, specific heat, resistivity, penetration depth, etc.).

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