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Magnetic signatures of the pseudogap phase and doping dependence of the antiferromagnetic resonance in $\text{HgBa}_2\text{CuO}_{4+\delta}$ YUAN LI, Stanford Univ., VICTOR BALEDENT, LLB, France, NEVEN BARISIC, Univ. Stuttgart, Germany, PHILIPPE BOURGES, LLB, France, YONGCHAN CHO, Pusan National Univ., Korea, BENOIT FAUQUE, ESPCI, France, KLAUDIA HRADIL, Univ. Gottingen, Germany, RICHARD MOLE, Forschungsneutronenquelle HML, Germany, YVAN SIDIS, LLB, France, GUICHUAN YU, Stanford Univ., XUDONG ZHAO, Jilin Univ., China, MARTIN GREVEN, Stanford Univ. — We present our latest experimental results for the pseudogap phase of the model high-Tc superconductor $\text{HgBa}_2\text{CuO}_{4+\delta}$. Refinement of our polarized neutron diffraction experiments [Y. Li *et al.*, Nature **455**, 372 (2008)] using sizable single-crystals of this structurally simple compound consistently show a novel magnetic order below the pseudogap temperature. Furthermore, DC magnetic susceptibility measurements on the highest-quality crystals exhibit a response with highly anisotropic temperature- and doping-dependence, in which the pseudogap anomaly is only visible when the magnetic field is applied along the c -axis. These findings strongly suggest that the new magnetic order competes with the superconductivity. Building on our initial work for optimally-doped $\text{HgBa}_2\text{CuO}_{4+\delta}$ [G. Yu *et al.*, arXiv:0810:5759], we also briefly discuss preliminary results for the doping dependence of the antiferromagnetic resonance.

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