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First Results of the Phase II SIMPLE Dark Matter Search

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We report results of a 14 kgd SIMPLE run with 15 superheated droplet detectors of total active mass 0.209 kg, comprising the first stage of a 30 kgd Phase II measurement. In combination with the results of other, neutron-spin sensitive, experiments, these results yield a limit of $|a_p| < 0.32$ on the spin-dependent sector of weakly interacting massive particle-nucleus interactions with a 50% reduction in the allowed region of the phase space formerly defined by XENON, KIMS and PICASSO, and a limit of 1.3×10^{-5} pb in the spin-independent sector at $M_W = 35$ GeV/c².

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