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”Here be SUSY” - Prospects for SUSY searches at future colliders

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Some say SUSY is dead, because LHC has not discovered it yet. But is this really true? It turns out that the story is more subtle. SUSY can be ‘just around the corner’, even if no signs of it has been found and a closer look is needed to quantify the impact of LHC limits and their implications for future colliders. Here, a scan of the relevant parameter space of (weak-scale) SUSY parameters, is presented.

I concentrate on properties relevant to evaluate the experimental prospects: mass differences, lifetimes and decay-modes. The observations are then confronted with estimated experimental capabilities.

I have considered what can be expected from (HL-)LHC, where it turns that large swaths of SUSY parameter space will be hard to access. For e^+e^- colliders, the situation is simple: at such colliders, SUSY will be either discovered or excluded almost to the kinematic limit.

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