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Exploring the supersymmetry through gauginos with FCC-hh

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The pure gravity mediation model based on anomaly-mediated supersymmetry breaking is among the well-motivated models consistent with the large Higgs mass and the non-observation of supersymmetry at the LHC so far. We focus on a scenario where all the gauginos, including the neutral Wino which is the lightest supersymmetric particle, are within the kinematical reach of the FCC-hh, and study the model through the gaugino production processes. We show that the masses of gauginos, the lifetime of the charged Winos, and the mass spectrum of squarks can be studied in detail by analyzing these processes even if squarks are out of the kinematical reach.

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