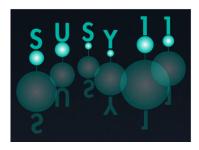Contribution ID: **319**   Type: **not specified**

A complete calculation for direct detection of Wino dark matter

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In the anomaly-mediated supersymmetry (SUSY) breaking scenario, neutral gaugino of SU(2)_L multiplet, Wino, can be the lightest SUSY particle and become a candidate for dark matter. We calculated scattering cross section of Wino dark matter with nucleon, which is responsible for direct detection of the dark matter, on the assumption that the SUSY particles and the heavier Higgs bosons have masses of the order of the gravitino mass in the SUSY standard model. In such a case, the Wino-nucleon coupling is generated by loop processes. We have included two-loop contribution to Wino-gluon interaction in the calculation, since it is one of the leading contributions to the Wino-nucleon coupling. It was found that the spin-independent scattering cross section with proton is $10^{-(46-48)}$ cm^2. While it is almost independent of the Wino mass, the result is quite sensitive to the Higgs boson mass due to the accidental cancellation.

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