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## Search for supersymmetric partners of electrons and muons in proton–proton collisions at $\sqrt{s}=13\text{TeV}$ (Article) [\(Open Access\)](#)

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### Abstract

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A search for direct production of the supersymmetric (SUSY) partners of electrons or muons is presented in final states with two opposite-charge, same-flavour leptons (electrons and muons), no jets, and large missing transverse momentum. The data sample corresponds to an integrated luminosity of  $35.9\text{ fb}^{-1}$  of proton–proton collisions at  $\sqrt{s}=13\text{TeV}$ , collected with the CMS detector at the LHC in 2016. The search uses the  $M_{T2}$  variable, which generalises the transverse mass for systems with two invisible objects and provides a discrimination against standard model backgrounds containing  $W$  bosons. The observed yields are consistent with the expectations from the standard model. The search is interpreted in the context of simplified SUSY models and probes slepton masses up to approximately 290, 400, and 450 GeV, assuming right-handed only, left-handed only, and both right- and left-handed sleptons (mass degenerate selectrons and smuons), and a massless lightest supersymmetric particle. Limits are also set on selectrons and smuons separately. These limits show an improvement on the existing limits of approximately 150 GeV. © 2019 The Author(s)

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#### References (67)

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- 1 Ramond, P.  
Dual theory for free fermions  
(1971) *Physical Review D*, 3 (10), pp. 2415-2418. Cited 946 times.  
doi: 10.1103/PhysRevD.3.2415  
[View at Publisher](#)
- 2 Golfand, Y.A., Likhman, E.P.  
Extension of the algebra of Poincaré group generators and violation of P invariance  
(1971) *JETP Lett.*, 13, p. 323. Cited 762 times.  
URL  
[http://www.jetpletters.ac.ru/ps/1584/article\\_24309.pdf](http://www.jetpletters.ac.ru/ps/1584/article_24309.pdf)
- 3 Neveu, A., Schwarz, J.H.  
Factorizable dual model of pions  
(1971) *Nuclear Physics, Section B*, 31 (1), pp. 86-112. Cited 918 times.  
doi: 10.1016/0550-3213(71)90448-2  
[View at Publisher](#)