Abstract Submitted
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Toroidal magnetic clouds in solar wind.[1] TALON WEAVER, UG student, Physics Department, Lamar University, TX 77710-10046., EVGENY RO-MASHETS, CRISTIAN BAHRIM, Physics Department, Lamar University, TX 77710-10046. — Propagation of toroidal magnetic clouds is modeled. In-situ magnetic and plasma measurements were fitted with Romashets and Vandas (Geophysical Research Letters, 2003) formula to determine size and orientation of the cloud near the Earth's orbit in Marubashi et al. (Solar Physics, 2015). Here, we apply this information to find the shape and speed of the toroid on its trajectory from solar corona to the Earth. Five events form the Marubashi's list were modeled, with more detailed look on May 15 1997 geomagnetic storm. The maximum speed of the cloud is close to 1500 km/s when reaching the helio-distance $r = 3$ R_S, where R_S is the solar radius. The cloud's arrival time and speed near the Earth's orbit are in good agreement with observations from existing literature.

Evgeny Romashets
Physics Department, Lamar University, TX 77710-10046.

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