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Magnetotail flows near lunar orbit: ARTEMIS statistics

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Since 2011 the two ARTEMIS probes orbit the moon and cross the Earth's magnetotail for about four days every month. We use five years of this data to analyze magnetotail flows on a statistical basis. We find that tailward and earthward fast flows (|v| > 300 km/s) occur at a comparable rate. Earthward flows are predominantly (80%) associated with northward Bz, while tailward flows are primarily accompanied by southward Bz. The dominance of southward Bz in tailward flows increases with the flow speed from about 60% for flows with |v| > 200 km/s to 70% for flows with |v| > 400 km/s. For either earthward and tailward flows, we find a clear dawn-dusk asymmetry with 60% (70%) of the earthward (tailward) flows occuring in the dusk sector.