

## The ability of NASA's Meteoroid Engineering Model to replicate *in situ* impact data

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Meteoroid environment models must describe the mass, directionality, velocity, and density distributions of meteoroids in order to correctly predict the rate at which meteoroids impact spacecraft. We present an updated version of NASA's Meteoroid Engineering Model (MEM) that better captures the correlation between directionality and velocity and incorporates a bulk density distribution. We compare the resulting model with the rate of large particle impacts seen on the Long Duration Exposure Facility (LDEF) and the Pegasus I and II satellites. The updated model shows closer agreement with these *in situ* data than previous versions of MEM.