

**Title:** Oblate-Earth Effects on the Calculation of  $E_c$  During Spacecraft Reentry  
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**Abstract:** The bulge in the Earth at its equator has been shown to lead to a clustering of natural decays biased to occur towards the equator and away from the orbit's extreme latitudes. Such clustering must be considered when predicting the Expectation of Casualty ( $E_c$ ) during a natural decay, because of the corresponding clustering of the human population in the lower latitudes. This study expands upon prior work, and formalizes in a single empirical equation the correction that must be made to the calculation of the average exposed population density as a result of this effect. The equation is represented as a function of ballistic number and inclination of the entering spacecraft over the credible range of ballistic numbers.