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*Energy of singular solutions to the Euler equations.* Preliminary report.

Regular solutions to the Euler equations conserve energy. For weak solutions this classical law may fail. According to Onsager the minimal regularity required for a weak solution to still conserve energy is Holder  $1/3+\epsilon$ . Under additional a priori assumptions on the set of singularities one can obtain weaker sufficient conditions for energy conservation. Such is the case, for example, when the singular set is a smoothly varying manifold in time. The case of a hypersurface in 3D, or a curve in 2D is especially relevant to studying vortex sheets. We establish an energy balance relation for vortex sheets that includes a correction term expressed via the jump of velocity field across the sheet. (Received December 13, 2007)