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Eddy dissipation rate in aviation applications of turbulence intensity assessment /

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A review of papers on the use of the EDR (eddy dissipation rate) parameter in meteorological aviation service is presented. EDR is associated with the rate of dissipation of turbulent kinetic energy and is the cube root of its value. The EDR characteristic, independent of an aircraft type, has been designated by ICAO as the measure for determining turbulence intensity. The physical basis of the EDR application, methods for determining EDR in situ and in the surface layer of the atmosphere using remote sensing are discussed. Some approaches to forecasting turbulence in EDR units in numerical weather prediction models are considered.

Keywords: turbulence, eddy dissipation rate, methods for estimating turbulent kinetic energy, turbulence climatology, EDR forecasting

Fig. 2. Ref. 47.