

WORLD METEOROLOGICAL ORGANIZATION
WMO TECHNICAL CONFERENCE ON METEOROLOGICAL AND
ENVIRONMENTAL INSTRUMENTS AND METHODS OF OBSERVATION
Towards fit-for-purpose environmental measurements
Amsterdam, The Netherlands, 8 - 11 October 2018

SUBMITTED ABSTRACT

0.	Paper Number	6
	Session Name	1. Characterization and standardization of environmental measurements - traceability assurance
1.	Title of the paper	Comparing DEVG & EDR Aircraft Turbulence Metrics

2.	Institution	Australian Bureau of Meteorology			
	Authors	Dr/Mr/Ms	Family name	First name	Country
a	Lead author	Dr	Body	Douglas	Australia
b	Co-author				
c	Co-author				
d	Co-author				

4.	Abstract of the paper
	<p>There are two different metrics for aircraft turbulence in current use – Derived Equivalent Vertical Gust (DEVG) and Eddy Dissipation Rate (EDR). DEVG uses vertical accelerometer measurements to determine the instantaneous vertical gust velocity, which, superimposed on a steady horizontal wind, would produce the measured acceleration of the aircraft. In contrast, the eddy dissipation rate is a parameter that quantifies the turbulence intensity within a fluid, making it an aircraft-independent measure of the atmospheric turbulence intensity. The onboard AMDAR software for 23 Airbus 330-200/300 has been configured to provide DEVG and EDR simultaneously enabling the rare opportunity two turbulence metrics to be directly compared for both “normal” flight and (severe) turbulence events. Results from this study will be presented.</p>