



## Turbulence Hazard Metric Based on Peak Accelerations for Jetliner Passengers

By Eric C. Stewart

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 40 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. Calculations are made of the approximate hazard due to peak normal accelerations of an airplane flying through a simulated vertical wind field associated with a convective frontal system. The calculations are based on a hazard metric developed from a systematic application of a generic math model to 1-cosine discrete gusts of various amplitudes and gust lengths. The math model simulates the three degree-of-freedom longitudinal rigid body motion to vertical gusts and includes (1) fuselage flexibility, (2) the lag in the downwash from the wing to the tail, (3) gradual lift effects, (4) a simplified autopilot, and (5) motion of an unrestrained passenger in the rear cabin. Airplane and passenger response contours are calculated for a matrix of gust amplitudes and gust lengths. The airplane response contours are used to develop an approximate hazard metric of peak normal accelerations as a function of gust amplitude and gust length. The hazard metric is then applied to a two-dimensional simulated vertical wind field of a convective frontal system. The variations of the hazard metric with gust length and airplane heading are demonstrated. This...



[READ ONLINE](#)  
[ 5.44 MB ]

### Reviews

*An exceptional pdf and also the typeface applied was intriguing to read through. It is definitely simplified but excitement in the 50 % in the ebook. I discovered this ebook from my dad and i recommended this pdf to find out.*

-- Jarod Ward

*Complete information for publication enthusiasts. It is really basic but shocks inside the fifty percent of your book. I am just delighted to let you know that this is basically the finest book i have read through in my individual lifestyle and might be the best pdf for actually.*

-- Elena Runolfsdottir Sr.