SPATIAL SYSTEMATICS OF EXTENSIONAL FAULT ACTIVITY

ROBERTS, G. P. Department of Geology, Birkbeck College, University of London, WC1E 7HX, London, U.K.

Spatial systematics of extensional fault activityROBERTS, G. P. Department of Geology, Birkbeck College, University of London, WC1E 7HX, London, U.K.The geometry, kinematics and rates of deformation for active normal fault systems are governed by simple scaling relationships between the lengths and throws of fault arrays (c.100-300 km in length) and the lengths and throws of individual faults within the array (c. 20-40 km in length). The scaling relationships allow prediction of deformation rates and deformation rate versus length profiles for individual faults. The input data are simple and describe the relative lengths of individual faults and the overall fault array. The above provides a new approach to quantifying seismic hazards.

Data illustrating the above from the Lazio-Abruzzo region of central Italy will be discussed in detail. Other examples from the western U.S.A. and Greece will also be presented.