A NEW DIGITAL ACCELEROGRAPH NETWORK FOR EL SALVADOR

J.J. Bommer[1], J.M Cepeda[2], J.C. Hasbun[2], W.M. Salazar[2], A. Suarez[3], A Udías[4], N.N. Ambraseys[1], E. Buforn[4], J. Cortina[2], R. Madariaga[5], P. Méndez[2], J. Mezcua[3], D. Papastamatiou[6]

1. Imperial College of Science, Technology & Medicine, London, 2. Universidad Centroamericana "José Simeón Cañas", San Salvador, 3. Instituto Geográfico Nacional, Madrid, 4. Universidad Complutense, Madrid 5. Institut du Physique de Globe, Paris, 6. National Technical University, Athens

INTRODUCTION

There are few countries whose geography and history have been so affected by earthquake and volcanic activity as the republic of El Salvador (Fig. 1). The capital, San Salvador, has the unenviable claim of being the Latin American city most frequently damaged by earthquakes Since 1700 San Salvador has been severely damaged by earthquakes on at least 14 occasions (Harlow *et al.* 1993). The last destructive earthquake to affect San Salvador occurred on 10 October 1986, causing about 1,500 deaths and extensive damage over much of the city, as well as causing an economic loss equivalent to 31% of El Salvador's GNP (Coburn and Spence 1992)

El Salvador has been the focus of several studies of seismicity and seismic hazard and the San Salvador earthquake of October 1986 generated renewed interest in the area. Three major hazard studies have produced seismic zonifications of El Salvador and a fourth has been carried out at a regional level in Central America The studies for El Salvador have been carried out by the US Geological Survey (Algermissen *et al.* 1988), Stanford University (Alfaro *et al* 1990) and the Universidad Nacional Autónoma de México (Singh *et al* 1993) The Central American study has been produced as part of the collaborative research effort amongst the Centro de Coordinación para la Prevención de Desastres en América Central (CEPREDENAC), the University of Bergen and NORSAR, (Rojas *et al*, 1993; Lindholm *et al*, 1995). Figure 2 shows the 475-year return-period accelerations presented in the three studies specifically focused on El Salvador. There are very considerable differences in the results obtained: for example, the values for the 475-year return period ground acceleration in San Salvador in these five studies are 0.3, 0.5, 0.76, 1 0 and 1.05*g*. A comparative review of these seismic hazard assessments by Bommer *et al.* (1996) highlights the uncertainties associated with the available seismological and geophysical data, and the necessity of resolving the more important discrepancies before attempting to produce another zonification of El Salvador.

This article introduces an initiative which is attempting to produce a more reliable database from which a seismic hazard assessment for El Salvador will be carried out. Through contacts established during field investigations of the 1986 San Salvador earthquake, a collaborative research project has been established with support from the International Scientific Cooperation program of the Commission of the European Communities. The partner in the research collaboration in El Salvador is the Universidad Centroamericana "José Simeón Cañas" (UCA), the second oldest university in the country, which is run by the Society of Jesus. The project is co-ordinated by the Universidad Complutense de Madrid (UCM), and the other partners are the