

THE SEPTEMBER 19, 1985 MEXICAN EARTHQUAKE:
INTRODUCTION TO SPECIAL ISSUE

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The 1985 Michoacan (Mexico) earthquake was a terrible natural disaster for Mexico. This sober reminder of the catastrophic potential of earthquakes places our research into a larger perspective. There are many lessons to be learned from this earthquake. In the context of earthquake engineering, it is important to understand the causes of structural failure, and our Mexican colleagues have contributed valuable new information, e.g. damage maps and excellent recordings of ground acceleration, toward this end. In the seismological context, the Mexican earthquake is an important event in both a global and regional sense. There had been a global hiatus in the occurrence of large earthquakes from 1980 until 1985 when two large earthquakes occurred, the March 3, Chilean ($M_s=7.8$) and September 19, Mexican ($M_s=8.1$) earthquakes. The availability of high-quality digital data and local recordings provide a special opportunity to study large earthquakes. This special issue on the Mexican earthquake contains several papers on the long-period source characteristics of this earthquake, and

despite the variety of techniques used by the different research groups, there is a remarkable agreement on the basic features of the faulting geometry, seismic moment, and source duration. In the regional context, the 1985 event ruptured a seismic gap where unusual oceanic lithosphere is subducting beneath Mexico. This may have important implications for the seismic potential in the Guerrero seismic gap further south along the Middle America subduction zone.

The papers in this issue are mostly from a special session on the Mexican earthquake held at the December 1985 AGU meeting in San Francisco. This collection does not represent the final comprehensive results for this earthquake, rather we hope that it serves as a starting point for more detailed investigations and actions. Indeed, the international community must make full use of the lessons that this tragic earthquake offers.

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