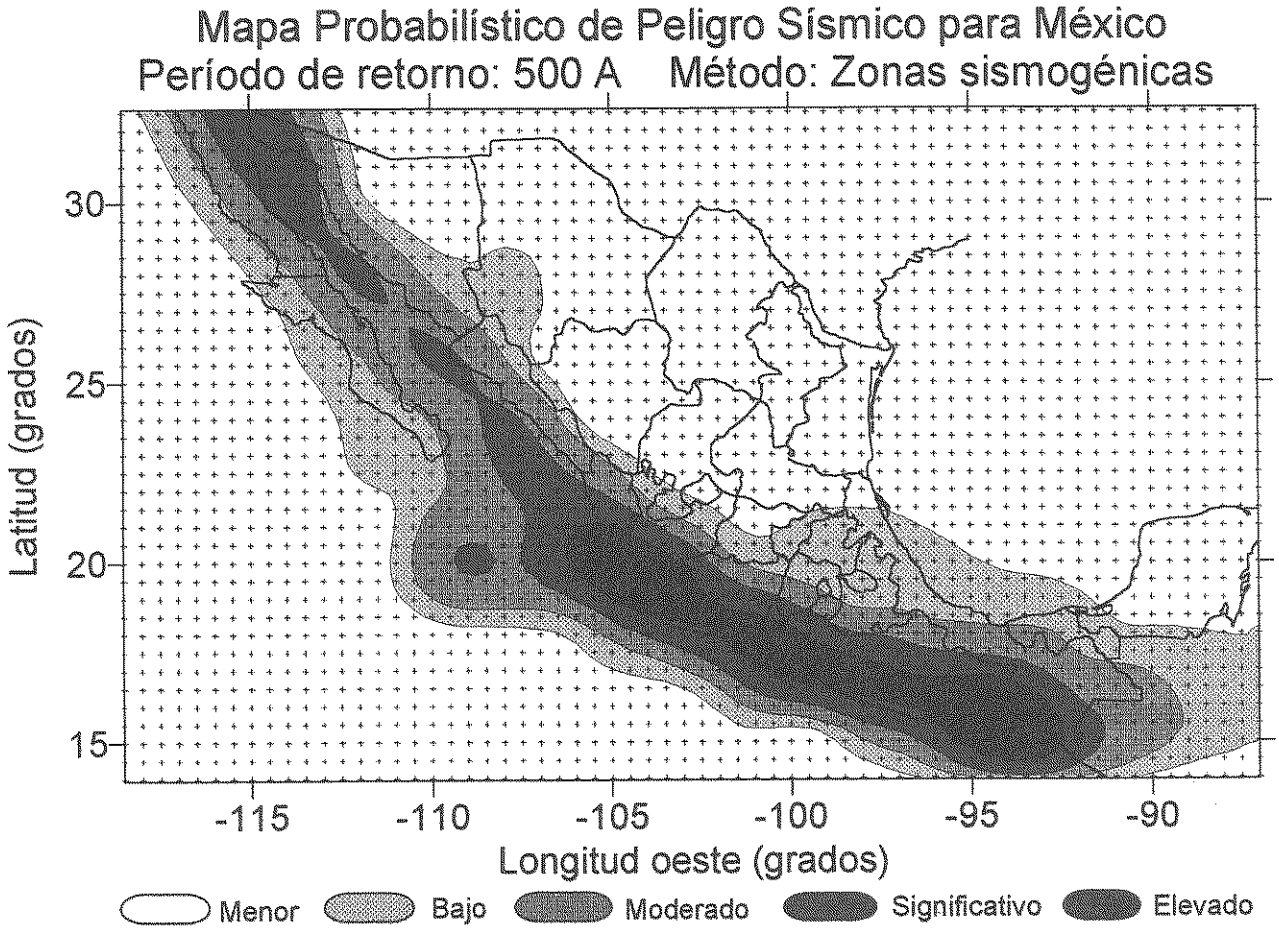

Figure 15. Probabilistic seismic hazard map for México for solid rock or equivalent compiled from data provided by UNAM. The plus signs indicate the points at which computations of seismic hazard have been made. Some smoothing applied during the contouring process.

- within the continuous belt along the subduction zone, both maps show the same levels of hazard values, with perhaps those on the map compiled from the UNAM data being slightly more frequent in the zone of "high" hazard.

A comparison of Figs. 16 and 17 shows clearly how the parametric historic method will mirror the distribution of the seismicity. The results using the source zone method are influenced by the distribution of source zones and, while the elbow appears in Fig. 15, it is much less pronounced.

The circular pattern shown in Fig. 16 in the southwest part of the map coincides clearly with a well defined pattern of seismicity (Fig. 17). This pattern is probably not present in Fig. 15 because the distribution of source zones probably not extend that far offshore. In the case of the other seismic hazard patterns in the eastern part of the map shown in Fig. 16, three possible explanations come to mind:

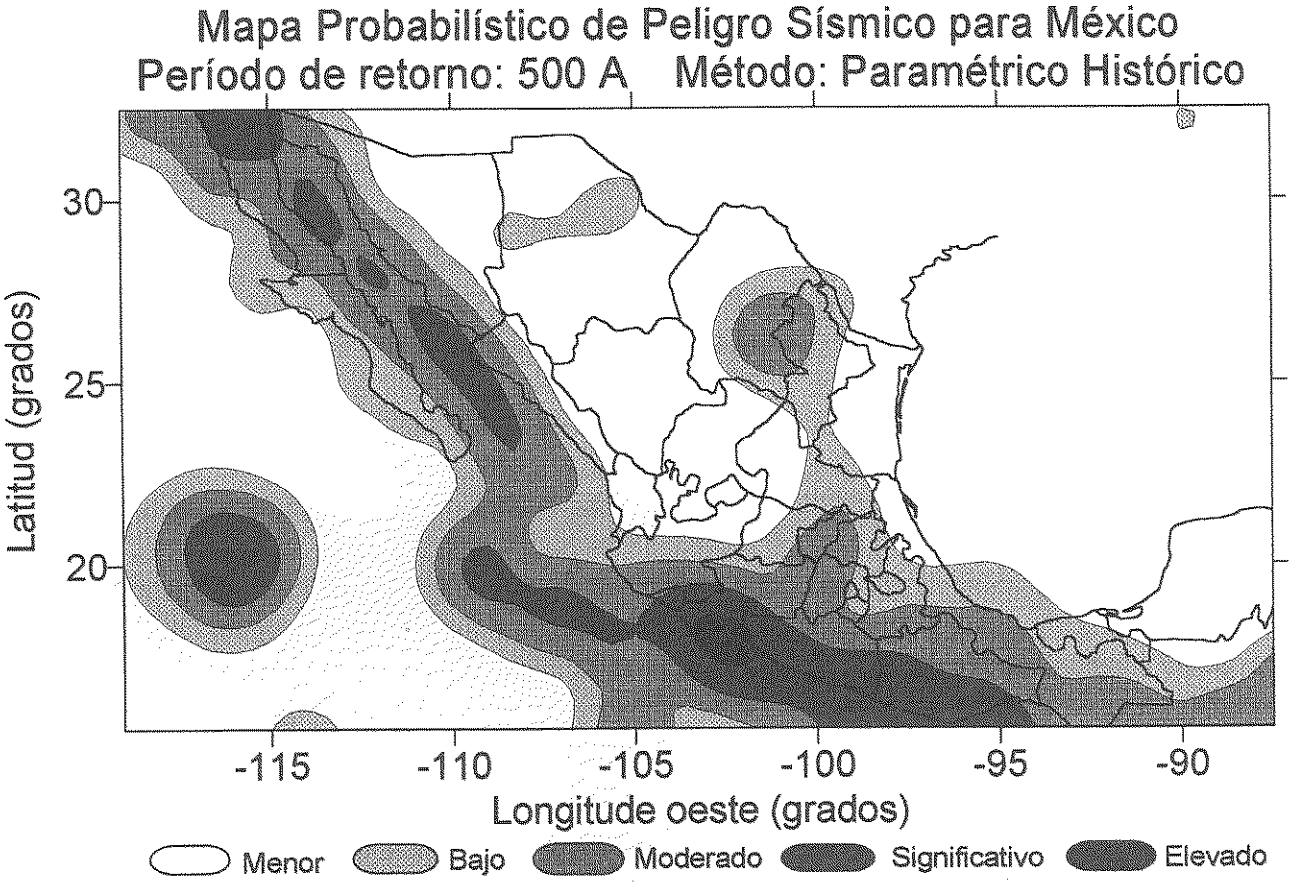

Figure 16. Probabilistic seismic hazard map of México compiled by IPGH from data computed with the historic parametric method developed for this project. The values of probabilistic seismic hazard have been computed for solid rock or equivalent.

- differences in the two methods of computing seismic hazard,
- the use of different attenuation relations - the CLIM94 relation used by IPGH does not attenuate as rapidly, and
- differences in the catalogues used.

The project catalogue has been compiled from a combination of data provided by UNAM supplemented by events in the ISC catalogue Copies of the project catalogue have been distributed to the regions, but no comments have been received as to differences with regional and local catalogues . This possiblity should be looked into in the near future to be certain the differences are real. We note the situation is similar with respect to the other regional catalogues.

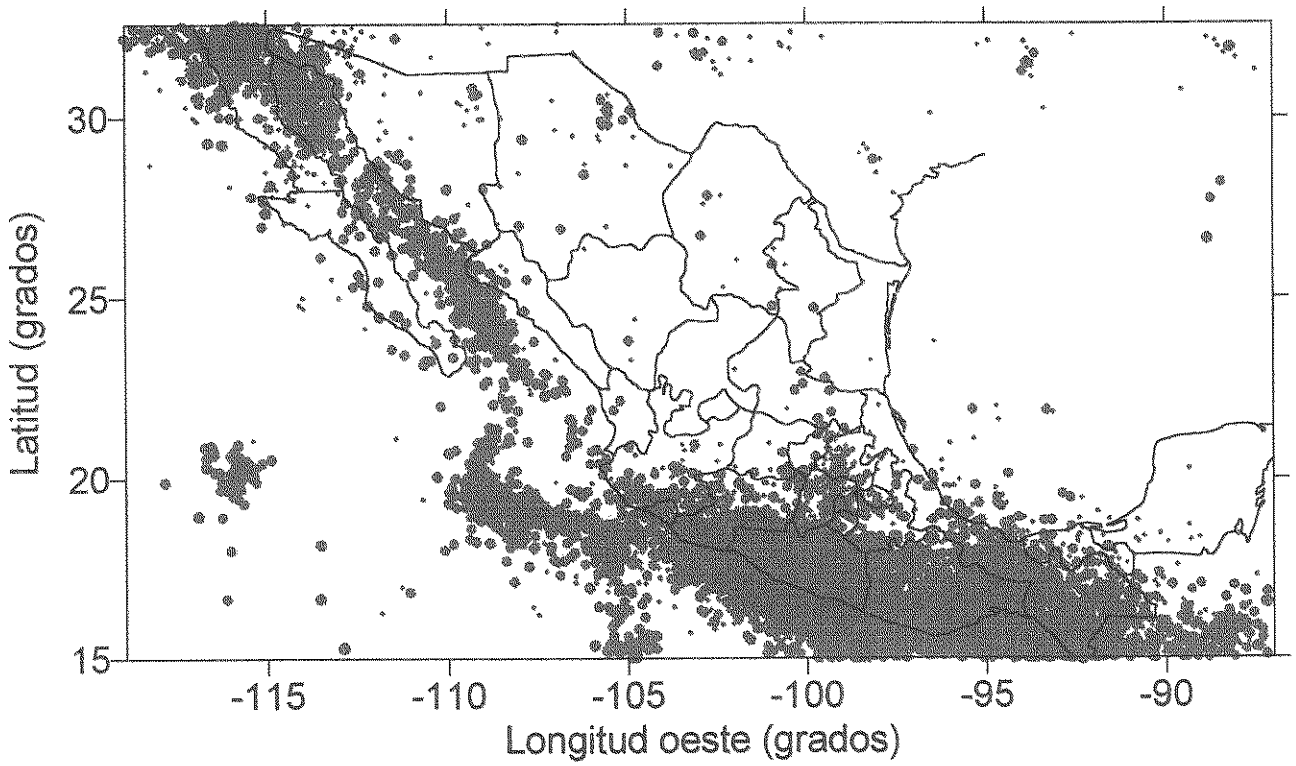

Figure 17. Distribution of seismicity in the period 1964-1993 in México as recorded in the project catalogue. The size of the dot is proportional to the magnitude of the event.

Table 6 shows that the mean seismic hazard values for the five zones of hazard in Central America agree very well in the lower three levels, less well in the fourth or second highest and not at all in the fifth or highest level. This highlights a concern that surfaced in the last meeting of the Steering Committee about the overall lower level of the seismic hazard values in Central America when compared to those of adjacent regions in México and South America. As the IPGH values were also calculated using the CLIM94 attenuation relation, the lower values in the ECG-UCR grid cannot be explained by differences in attenuation. Perhaps the source zone model and the recurrence relations within some or all of the source zones (possibly due to differences in the catalogue) could be possible explanations of the difference.

Table 6
Central America
Comparison of ECG-UCR and IPGH Gridded Seismic Hazard Values
Return Period = 500 yr

Value	ECG-UCR Grid			IPGH Grid		
gal	Number of Grid Values	Average gal	RMS Dispersion gal	Number of Grid Values	Average gal	RMS Dispersion gal
>500	0	0	0	4	627	62
250-500	170	329	45	215	348	66
125-250	268	182	31	232	184	66
62.5-125	89	96	17	93	99	17
<62.5	32	49	10	15	51	5

The results might also be affected by the different procedures used to compute the distance to the target point when calculating the PGA for a given earthquake. Whatever is the cause, some reconciliation of these differences will be necessary in the event of any major economic development in the boundary area of Central America with either México or South America.

Figs. 18 and 19 show probabilistic seismic hazard maps for Central America compiled from data computed by ECG-UCR by means of the source zone method and by IPGH using the historic parametric method A comparison of the two diagrams suggests the following:

- the general shape of the contoured map is much the same in both cases, with any variations likely due to differences in the two methods

- the general level of seismic hazard on the map compiled from ECG-UCR data is lower than that of the IPGH map (see also Table 7 and the related discussion above) - for example, there is no zone of "high" hazard on the map compiled from ECG-UCR data,

- the sharp nearly east-west trend so prominent in the IPGH-based map is broader on the ECG-UCR-based map.

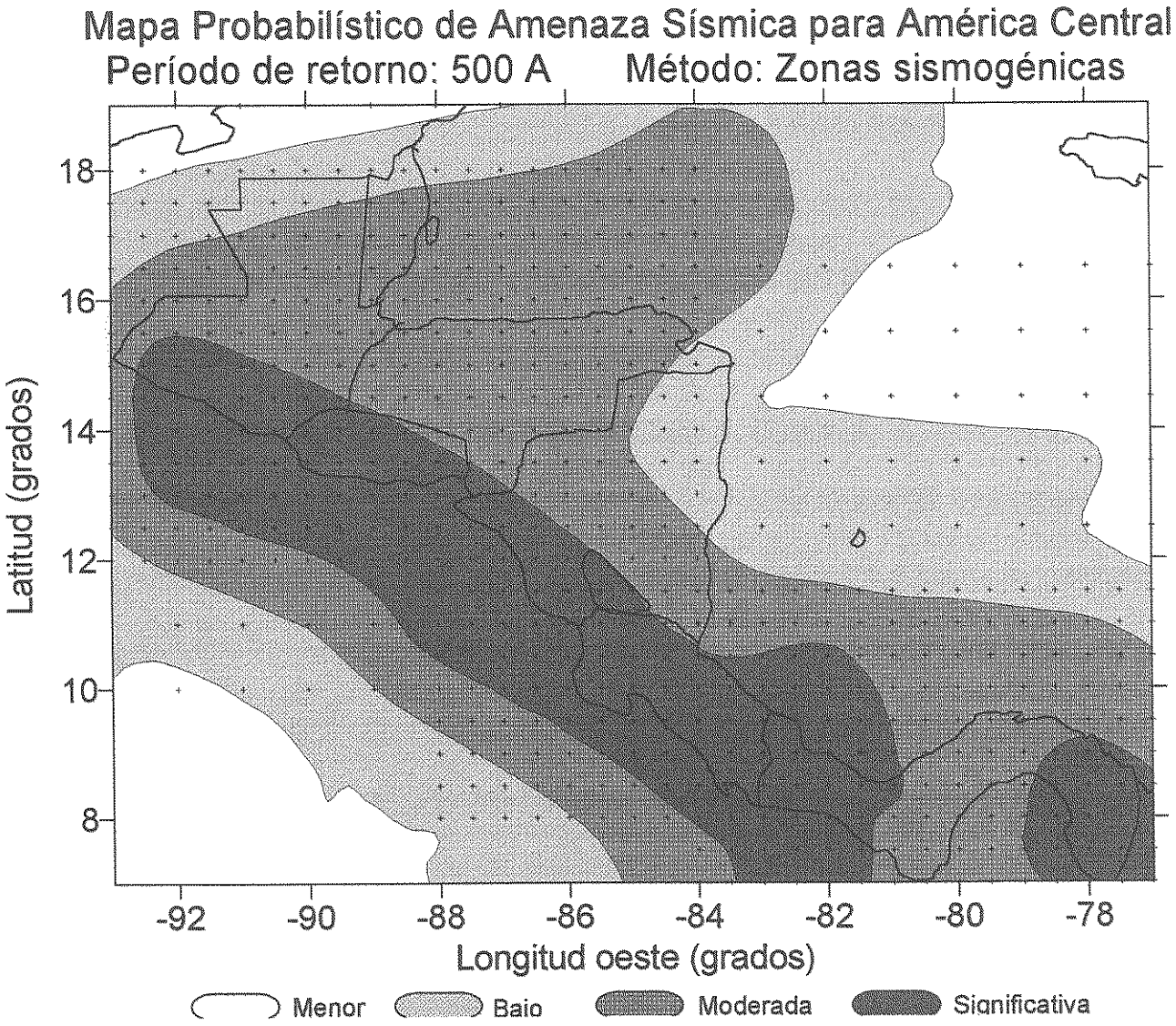

Figure 18. Probabilistic seismic hazard map (solid rock or equivalent) for Central America compiled from data provided by ECG-UCR and computed using the source zone method, the CLIM94 attenuation law and a computer programme provided by NORSAR. The plus signs indicate the locations for which data have been computed .

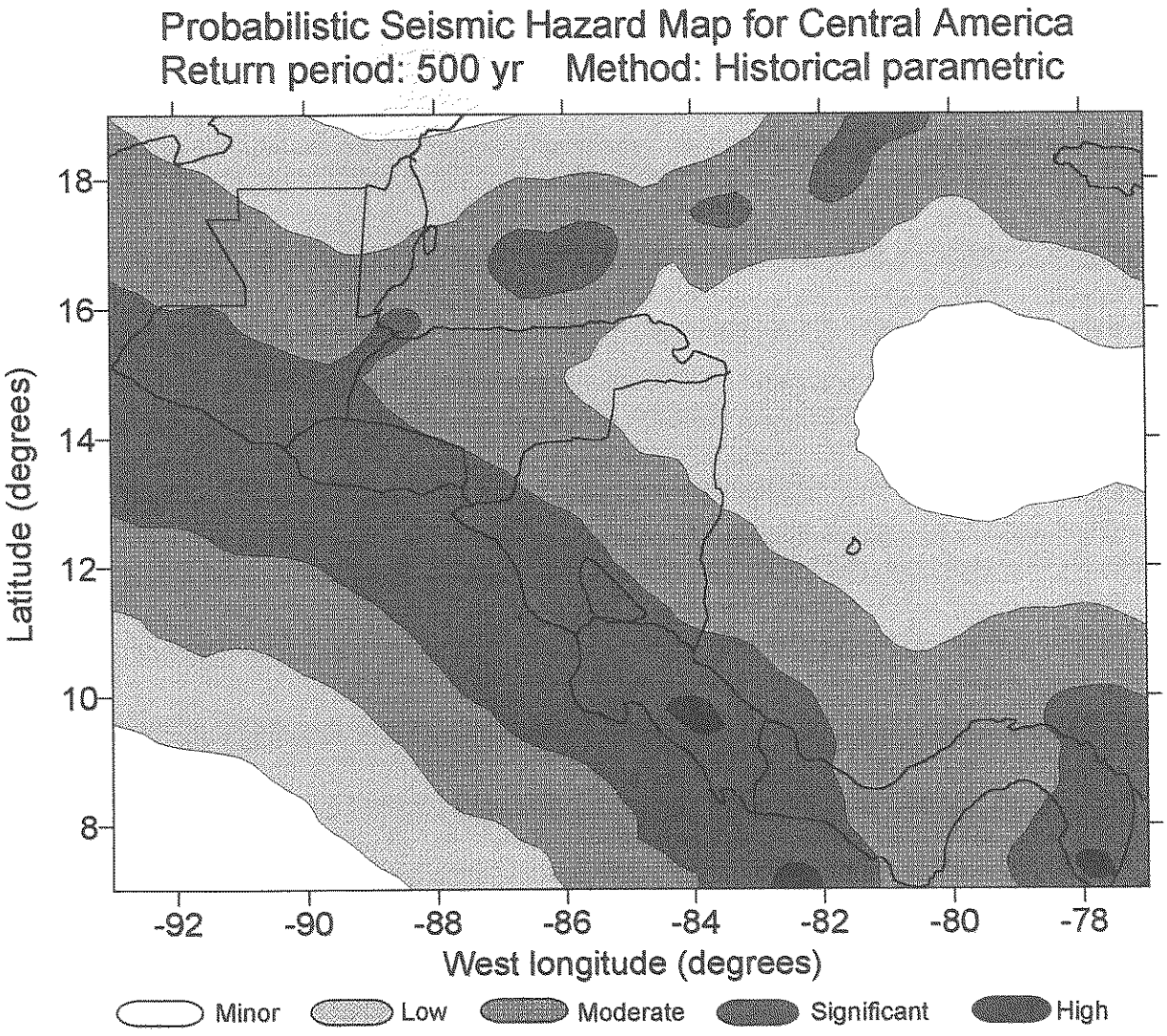

Figure 19. Probabilistic seismic hazard map for Central America computed and compiled by IPGH according to the specifications laid down by the Steering Committee. The CLIM94 attenuation law was used to compute seismic hazard estimates for solid rock or equivalent on a 0.5^0 grid.

Table 7 provides a comparison of the levels of seismic hazard computed by independent means in South America by CERESIS and IPGH. This table suggests that in terms of mean level the IPGH computed values of seismic hazard (i.e., before any processing to compile a map) agree well with those of CERESIS values throughout the entire range of seismic hazard values. The comparison at the high end of the range of seismic hazard (i.e., above 500 gal) is not as robust as that for the other ranges, but also does not suggest any cause for concern.