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ABSTRACTS

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shall understand the quantity of energy (in joules) of body seismic waves that reach the body of the dam within one year from earthquakes occurring in various directions. We took into account those seismic events only which acted on the body of the dam by energy exceeded noise level of the dam. The spectral analysis of the trial records received by devices established on the body of the dam has shown, fluctuations amplitudes of body waves within one second makes approximately 50 m. The same displacement (the sum of amplitudes of longitudinal and shear waves) arises in a seismic source with $\omega$=5. That is why when estimating seismic wind they took into account only those events, energy of body wave of which, at the moment of reaching the body of the dam, exceeded $\omega$=5. The greatest amplitudes of the elastic displacement corresponding to energy $10^{-10}$-10$^{-11}$ joules, reached the body of the dam in 1971 (Az. = 320°), 1974 (Az. = 159°), 1977 (Az. = 220°), 1978 (Az. = 181°) 1983 (Az. = 124°), 1985 (Az. = 134°) and 1992 (Az. = 201°).

The body waves fluctuations from the strongest Suusamyr earthquakes (Az.$\approx$57°) have reached the body of the dam with energy $10^{-12}$ joules. And it is possible, that they had a character of nonlinear elastic deformations. For determining the frequencies of characteristic vibrations of the dam and its separate parts the analysis of a noise and earthquakes on records of devices set on a body of the dam and on an offset is carried out. 

### AN INTENSITY HAZARD MAP FOR THE UK

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Although hazard studies are more frequently conducted using physical measures of strong ground motion such as PGA, hazard studies expressed as intensity are also of value. While intensity hazard cannot be directly related to engineering design, for insurance, planning and civil defence purposes it is perhaps more useful to show hazard in terms of a parameter that expresses better the potential for damage to buildings. All that is needed is to have an attenuation equation that relates intensity to magnitude and distance. A recent study in the UK, drawing on a large amount of intensity data from historical and modern earthquakes, has resulted in the establishment of a well-supported intensity attenuation equation for the UK, and this has been used to prepare an intensity hazard map for the whole UK showing the hazard at the 475-year return period level.

The source model used is an evolution of that used in previous hazard mapping studies in the UK and that used for the GSHAP and SESAME projects. As the model is still under review, the map presented here is something of the way of an interim version.

### LG-WAVE ATTENUATION IN THE UK

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The UK is classified as a stable continental region (SCR) and in the absence of any UK-specific estimates, attenuation has been assumed to be similar to SCRs like Scandinavia and eastern North America. Now that there are sufficient data, the validity of this assumption was tested. To do this, vertical recordings of Lg-waves from 11 larger (3.4 to 4.7 ML) UK earthquakes were used. The efficiency of Lg-wave propagation (defined as the spectral amplitude ratio of Lg to Pn) was measured for a range of frequencies. For most paths, the spectral amplitude of Lg was less than six times larger than that of Pn. Only these records were used to investigate attenuation. $Q(\omega)$ (the quality factor) was found by simultaneously inverting for the source, path and site effects for a range of frequencies, using Lg recordings made at epicentral distances greater than 200 km. The uncertainties on the results are large, particularly at lower frequencies but show that at frequencies of less than 4 Hz, $Q$ is roughly constant and comparable to other SCRs. Above 4 Hz, $Q$ is strongly frequency dependent and comparable to estimates for western Central America and California. This result could be used in conjunction with ongoing stochastic ground-motion modelling in the UK and may influence which empirical ground motion prediction relations are chosen for UK-specific seismic hazard assessments.