

Amplitude Biases of Stations Participating in GSETT-3

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The Group of Scientific Experts Technical Test 3 was initiated during 1995. The mb values reported by the GSETT-3 International Data Centre are systematically lower than those of the ISC, partly because of smaller measured amplitudes. IDC amplitudes contribute to ISC mb, so there is concern that 1995 ISC mb is not directly comparable with ISC mb from previous years. I find that there are large differences among individual GSETT-3 stations, precluding a uniform "fix". Amplitudes from some GSETT-3 stations, e.g., MOX and LOR, are unbiased and highly correlated with mb computed from non-GSETT-3 stations. Within some regions there is a consistent bias, e.g., amplitudes from ARU, OBN and KIV are each biased high compared with the non-GSETT-3 network. Bias may vary strongly with reported period, e.g., ARCES station mb averages 0.1 units greater than network mb when period is 0.2 or 0.3 s, but 0.4 units less than network mb when the period is 0.5-0.7 s. The ISC receives amplitude reports from more than one agency for some stations, and in 5 cases the GSETT-3 IDC used station codes for arrays that differ from the codes used by the operators. IDC amplitudes are systematically lower than operator amplitudes at 3 of these 5 stations. But for all 5 stations there is a large scatter in mb from amplitude read by different agencies; outlying differences exceed 1 magnitude unit. Amplitude biases from earlier years, from readings by station operating agencies, are generally consistent with 1995 IDC biases.