A success of the real-time tsunami forecast depends on accurate estimation of a tsunami magnitude. Here, we use the term tsunami magnitude in general sense, as a measure of tsunami energy. This measure is crucial for quantitative assessment of tsunami amplitudes. There are several tsunami magnitudes and intensity scales based on tsunami measurements. Traditionally, these scales use amplitude of tide gage measurements normalized by distance to compute the magnitude.

Tsunameters provide tsunami measurements that can be obtained faster than tide-gages and provide much cleaner tsunami signature. However, the definition of tide-gage tsunami magnitudes cannot readily absorb deep ocean DART data. The approach is to use DART data in combination with tsunami models to assess the magnitude of a tsunami (not to confuse with an earthquake magnitude). An inversion routine can provide an estimate of a tsunami source (a model tsunami source) based on DART data. NOAA forecast system provides a perfect vehicle for such assessments in real time.

Since the initial deployment of prototype tsunameters in 1986, substantial amount of deep ocean tsunami records has been collected. We have analyzed over 30 tsunamis with these data, most of them in real time, to assess sensitivity of the tsunami magnitude based on tsunameter data and have compared the results with independent from the analysis tide gage data. Results of the analysis and comparisons will be presented.