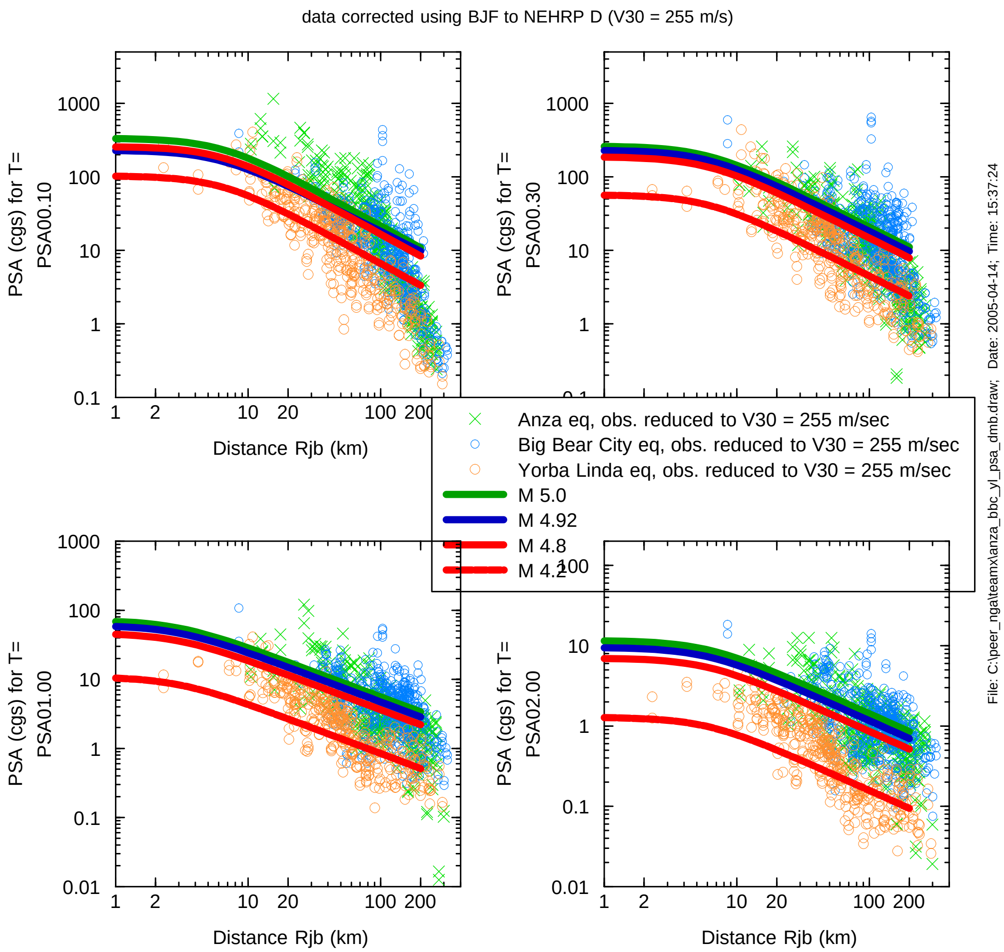
All—

You may recall that in my presentation I showed that the Yorba Linda (YL) data are lower expected for the NGA flatfile magnitude of 4.8 (and Ken's event term confirmed this). I mentioned that perhaps the magnitude was too high. I happened to be reading a paper yesterday by Komatitisch et al. (2004), in which they model long-period (greater than 6 sec) displacements for the event, using **M** = 4.2 rather than 4.8. They do not state how they obtained **M** for the event, but I imagine it is based on their modeling (and the method of Liu et al., 2004). The figure below shows data for the Anza, Big Bear City, and Yorba Linda quakes. Clearly the Yorba Linda event is smaller than the other two (whose magnitudes in the flatfile are 4.92, 5.0, and 4.8 for the three events, respectively). In addition, the attenuation with distance seems to be different for YL than the other two at shorter periods. To see how the amplitudes compare to predictions using my equations with different **M** values, I superimpose the predictions from my simplest ground-motion prediction equation (GMPE) on the data in the figure below. The comparison is mixed, but remember that I showed that using an anelastic term (not included in the equations used to produce the curves in the figure) gives a much better fit. It does seem that the offset between the YL and the other two events is about what I find using my GMPE, so maybe Komatitisch et al.s **M** of 4.2 is OK and the flatfile value should be changed. On the other hand, the flatfile only contains 12 recordings for this event (but this also should be changed, but that is a bigger job).

By the way, the Liu et al. (2004) paper gives **M** = 4.92 and depth = 6.3 km for the 22 Feb 2003 Big Bear City earthquake. The NGA flatfile gives **M** = 5.0 and 1.2 km for that event. Perhaps the flatfile values should be changed.

Here is the figure:



References

Komatitsch, D., Q. Liu, J. Tromp, P. S\"uss, C. Stidham, and J. H. Shaw (2004). Simulations of ground motion in the Los Angeles Basin based upon the Spectral-Element Method, \bssa{94}{187--206}.

Liu, Q., J. Polet, D. Komatitsch, and J. Tromp (2004). Spectral-element moment tensor inversions for earthquakes, \bssa{94}{1748--1761}