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V_{S30} - USE AND MISUSE

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Vs30, the average shear-wave velocity in the top 30 meters, has been a subject of active debate in the field of ground motions and seismic hazard analysis. While it has been widely adopted by many recent Ground Motion Prediction Equations (e.g. PEER-based NGA projects) to be the primary parameter to represent the effects of shallow geology on ground motions, it is often a subject of criticism. The main objectors to the use of Vs30 in GMPE's often claim that it is a non-physical parameter, that it only represents the very top part of the soil layer, and that GMPE's should not replace site-specific response analysis.

Our objective in this presentation is not to defend Vs30, but to review the reason for the wide acceptance of Vs30 and discuss its benefits and limitations. We will review some of the other alternatives suggested in the literature, and discuss their benefits and limitations. We will explain why although Vs30 is not a physical property, its correlation to the deeper structure is the main reason for using it as a proxy and show that in many cases it can successfully predict the response of the entire soil column.

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