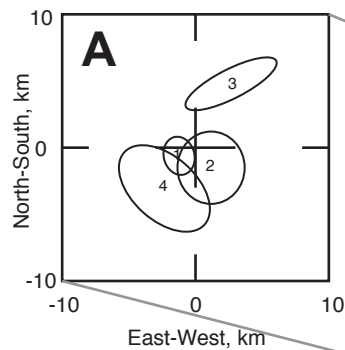


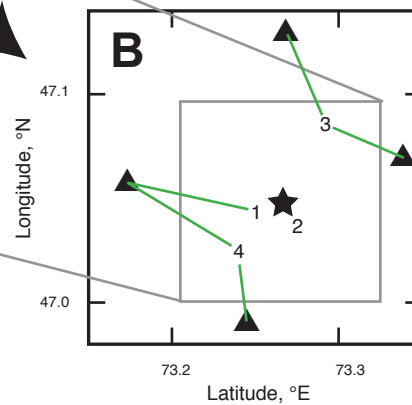
# Reference Event Location with Direct Calibration in Hypocentroidal Decomposition

Cluster Vectors, Relative Location

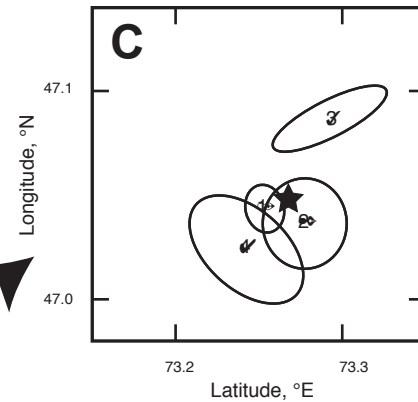


(Using teleseismic, regional,  
even local data, any phase,  
any TT model)

Hypocentroid, Geographic Location  
Based on Local-distance Data  
and Appropriate Crustal Model



Cluster Vectors, Geographic Location



**Unbiased!**