

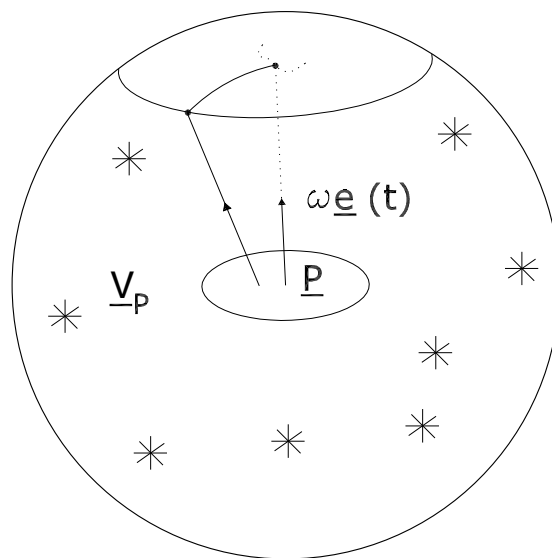


Figure 1: Rotation of a rigid Earth seen in a Celestial Reference System.



Figure 3: Worldwide IVS sites.

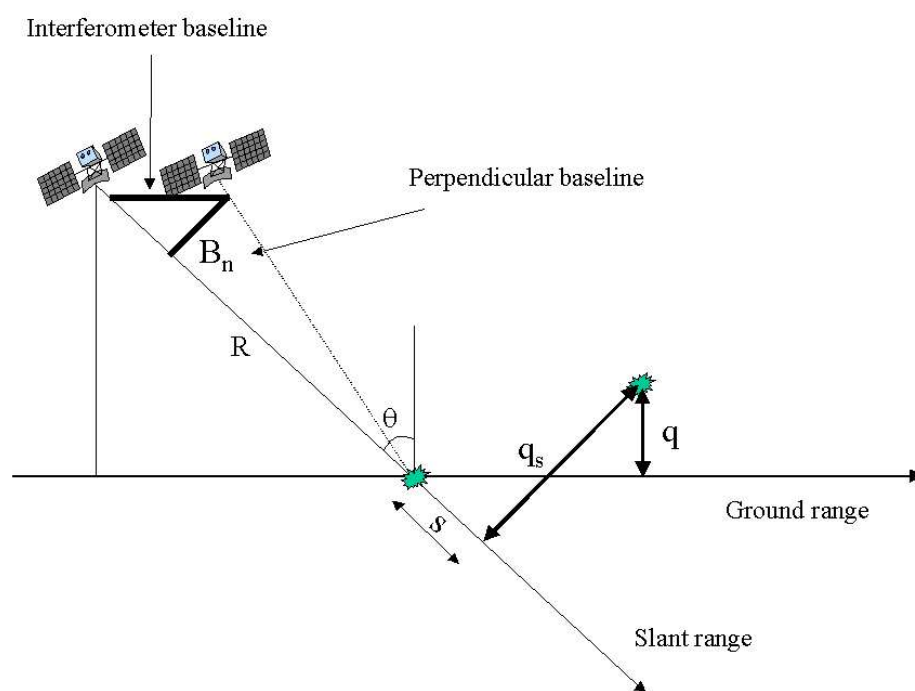


Figure 4: Geometric configuration of SAR satellite.

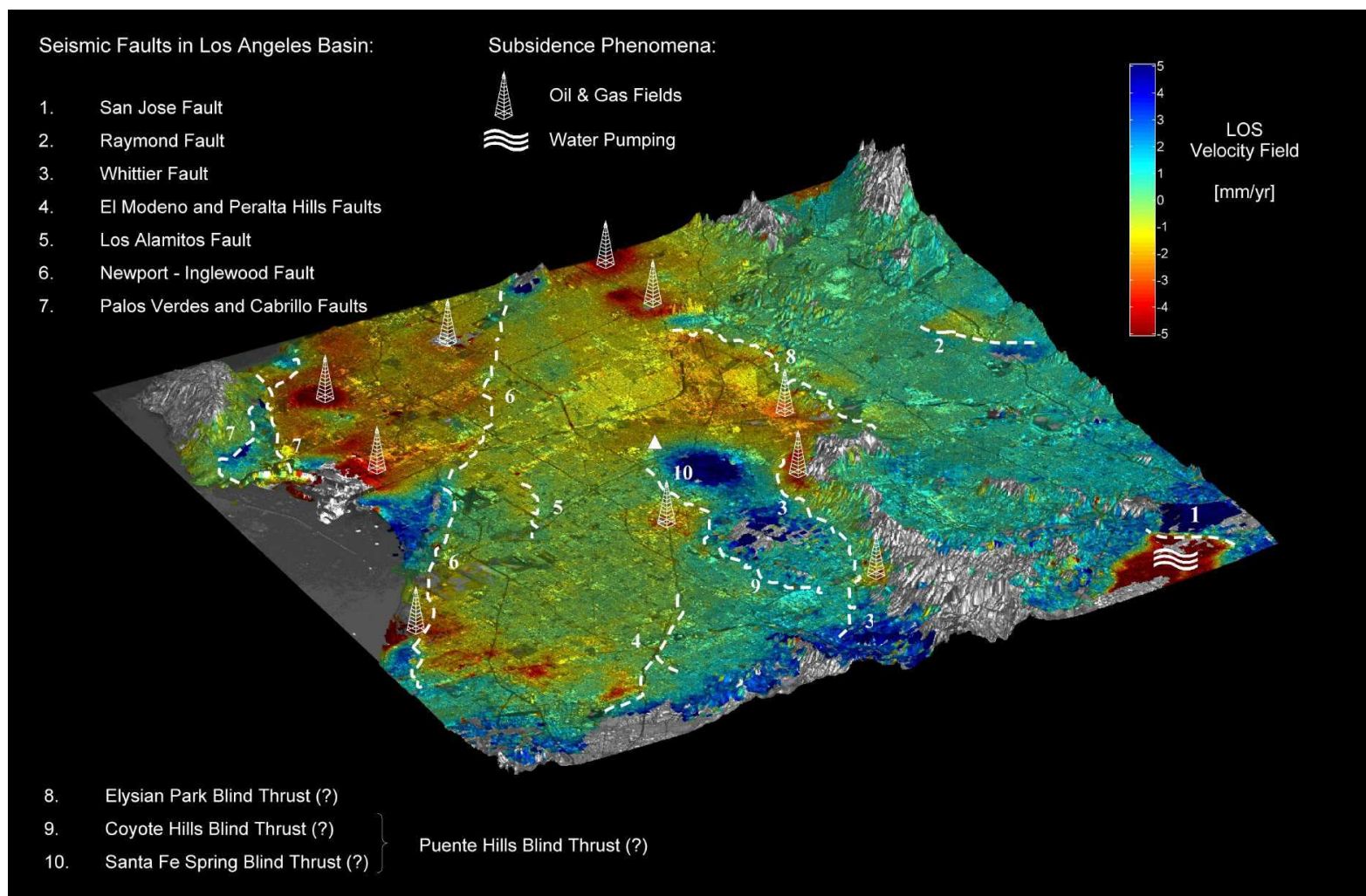


Figure 5: Seismic faults and subsidence in Southern California from PS data.

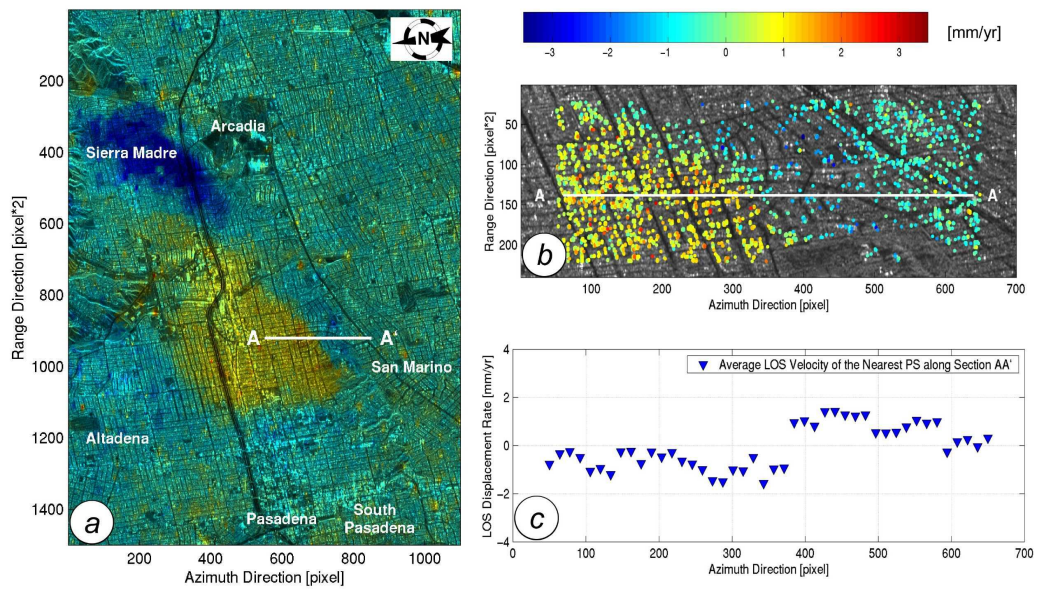


Figure 6: Velocity field across a fault.

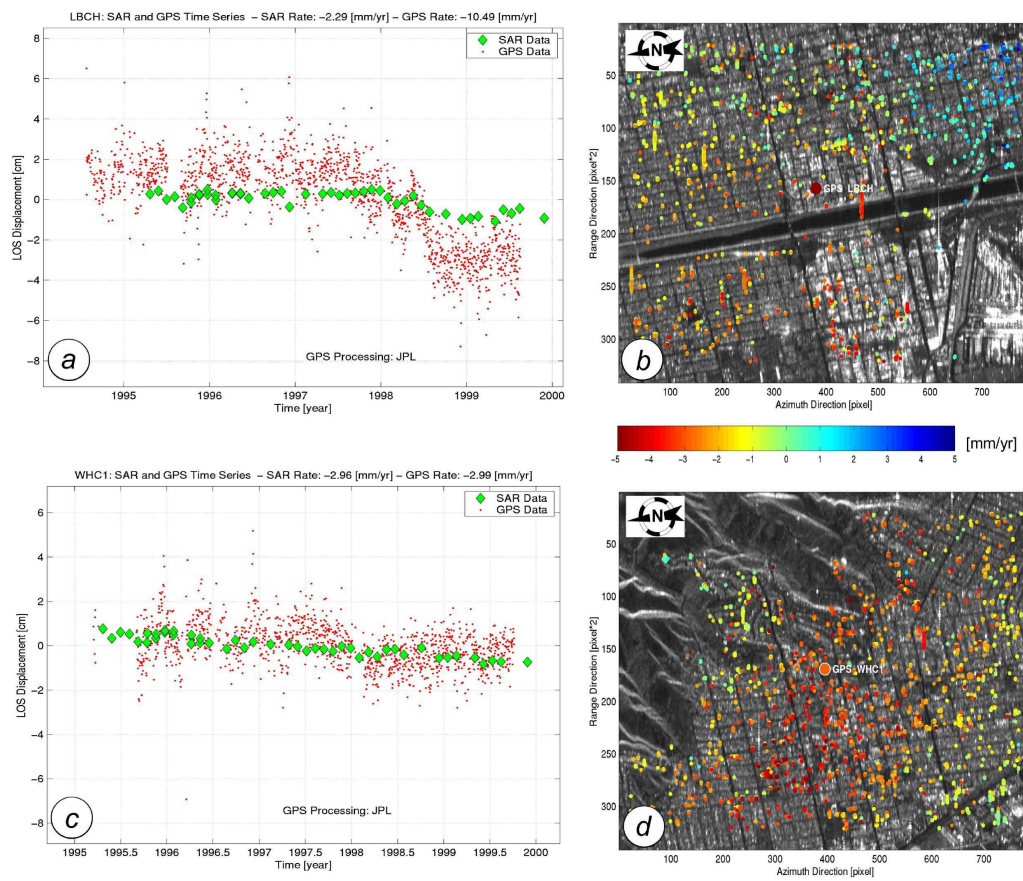


Figure 7: PS - GPS comparison in Los Angeles.

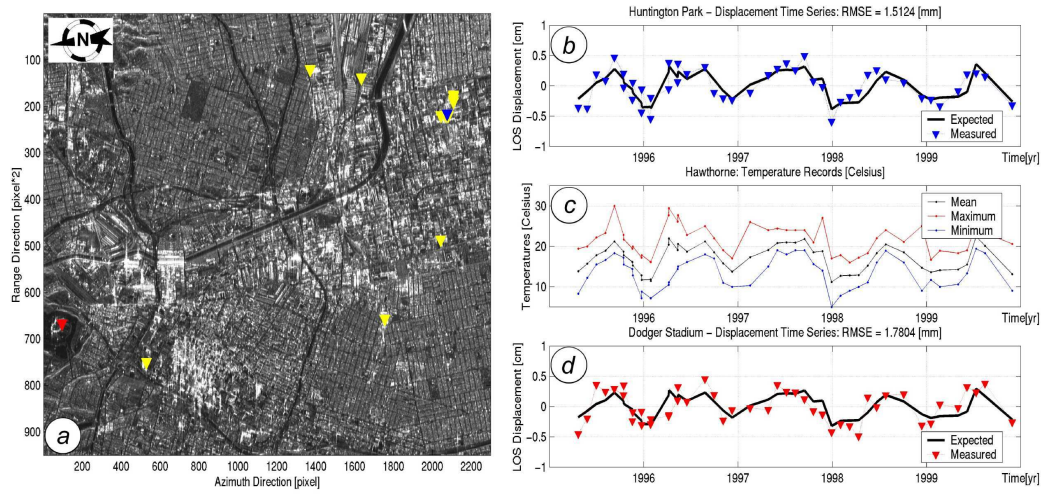


Figure 8: Thermal dilation of structures in Los Angeles: LOS motion versus maximum temperature of the day (the satellite is sun synchronous at 10:30 a.m.).

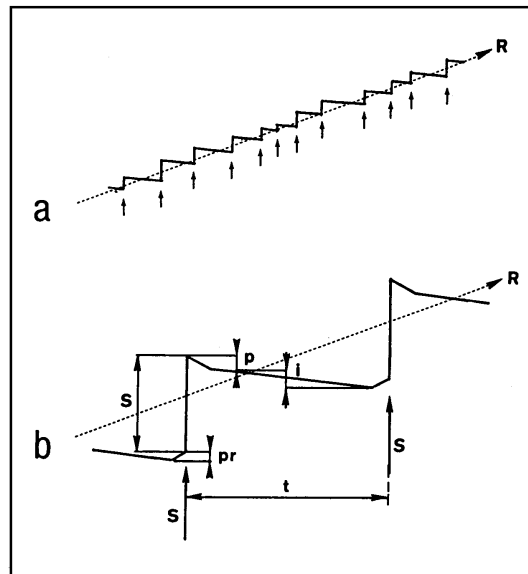


Figure 9: In seismic regions where uplift is predominant, the uplift trend, though apparently more or less gradual over the long term, may consist in the short term of sudden uplifting movements accompanying great earthquakes, separated by more or less long periods of seismic quiescence and gradual subsidence. S = coseismic, pr = preseismic, p = postseismic, i = interseismic, t = recurrence time.



Figure 10: Raised notches near Gushikami (south coast of Okinawa) ($\sim 26^{\circ}07'N$, $127^{\circ}45'E$). Tidal range: 1.7 m. Water level at -0.65 m (below MSL). Elevation of the notch vertex: +2.9 m (a metre gives scale). Some fossil barnacles are preserved between +2.55 and +2.95 m on the notch undercut in limestone blocks projecting above a dead coral reef flat. In a nearby sea cave, at $\sim +2.9$ m, similar barnacles (*Octomeris sulcata*) collected in growth position have been dated 2330 ± 85 yr B.P. (Gak-5195) (Machida *et al.*, 1976) (photo 6604, March 1981).



Figure 11: Marks left by the last two fast uplift movements at Shih-y-san. Tidal range: 1.45 m. At about +10 m, remnants of a notch and of an algal ridge (a), dated 1220 ± 60 yr B.P. (Gif-8646), indicate the approximate time when the relative sea level fell to about +5.5 m, developing a continuous notch (c) and widening a sea cave. Oysters colonizing the walls of the cave died about 910 ± 70 yr B.P. (GifA-91090), when a new uplift brought the relative sea level near its present position. The good state of preservation of oyster and barnacle shells inside the cave and of the base of the notch profile indicate that the uplift movement was very fast, probably coseismic (photo B724, January, 1990).

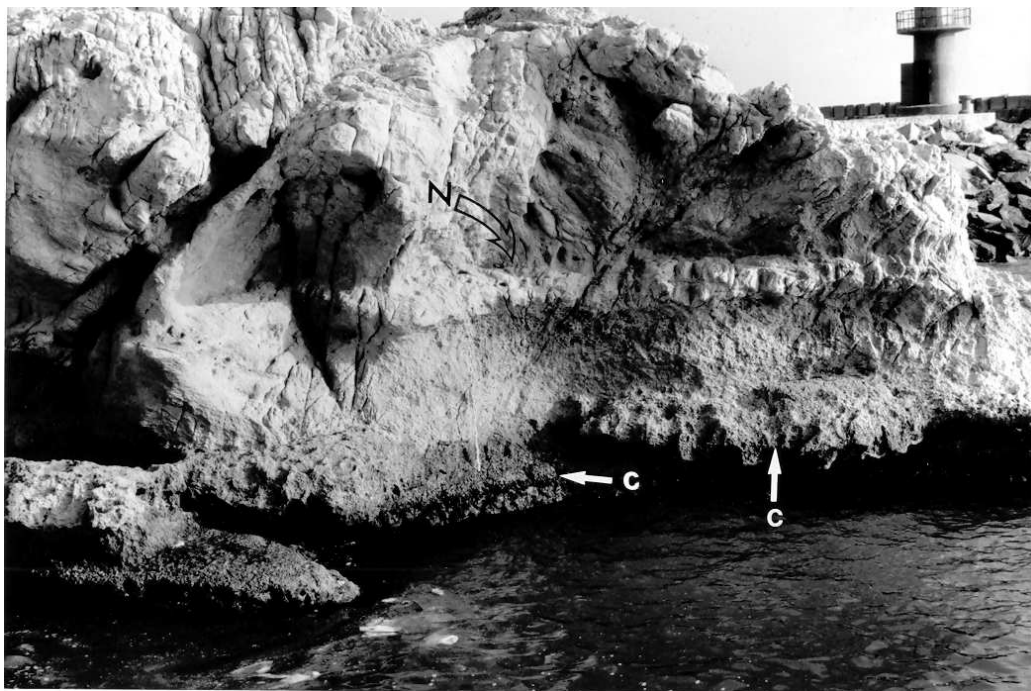


Figure 12: A double raised shoreline at Çevlik ($36^{\circ}10'N$, $35^{\circ}52'E$). Tidal range: negligible. According to four radiocarbon dates, the upper shoreline (an erosion notch at about +2.9 m) (N) corresponds to a relatively stable sea level position between about 4500 and, roughly, 770 B.C., when a 2.1 m uplift took place. The lower raised shoreline is here represented by spectacular cornices made by oysters and vermetids (c), which developed since about 770 B.C., until the occurrence of a coseismic uplift between 430 and 710 AD. This displacement is tentatively ascribed to the A.D. 526 earthquake, which destroyed Antioch and Seleucia Pieria and caused a tsunami in the area. Several other earthquakes are known to have occurred during historical times in this region (*Guidoboni et al.*, 1994; *Ambraseys et al.*, 1994), but no other marks of vertical displacement could be observed (photo A719, May 1988).



Figure 13: A series of notches dating from the last 6,000 years (four of which have been dated by radiocarbon) appears between sea level and +3.75 m on the limestone cliffs near Cape Ladiko ($\sim 36^{\circ}19'N$, $28^{\circ}15'E$). Tidal range: ~ 0.2 m. According to the notch profiles and to possible rates of notch undercutting by marine (bio)erosion, the sea must have remained relatively stable at the level of each notch for several centuries, whereas displacements of sea level from one notch to the other must have been rapid, probably coseismic (photo 4537C, May 1978).



Figure 14: At Kisamos (now Kastelli) ($\sim 35^{\circ}30'N$, $28^{\circ}38'E$) (tidal range: negligible) the uplift ascribed to the A.D. 365 earthquake reaches about 6.5 m, as indicated by traces of marine erosion on limestone cliffs. A most prominent feature is the uplifted mole of rubble blocks of the Roman harbour, which rises several metres above sea level, delimiting a small basin now completely filled in with sand. Marks of in situ marine incrustations dating from the uplift time are still preserved on many blocks (photo G523, June 2000).



Figure 15: A double bench, with steps at +0.6 and +1.2 m, respectively, around a mushroom rock in the harbour of Poros, Cephalonia ($\sim 38^{\circ}09'N$, $20^{\circ}47'E$) (tidal range: negligible). The lower step (L) was uplifted coseismically in 1953. The upper step (U) was probably also uplifted coseismically around A.D. 350–710 (photo B899, June 1990).