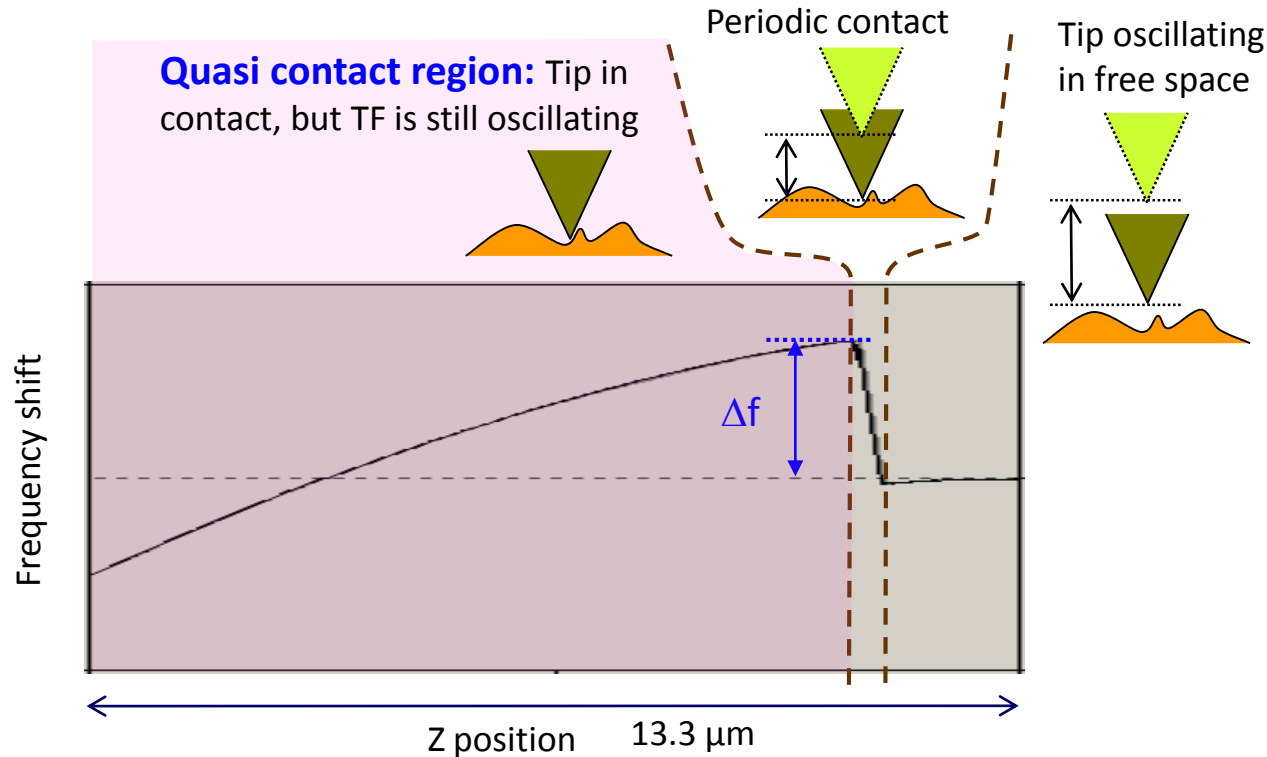




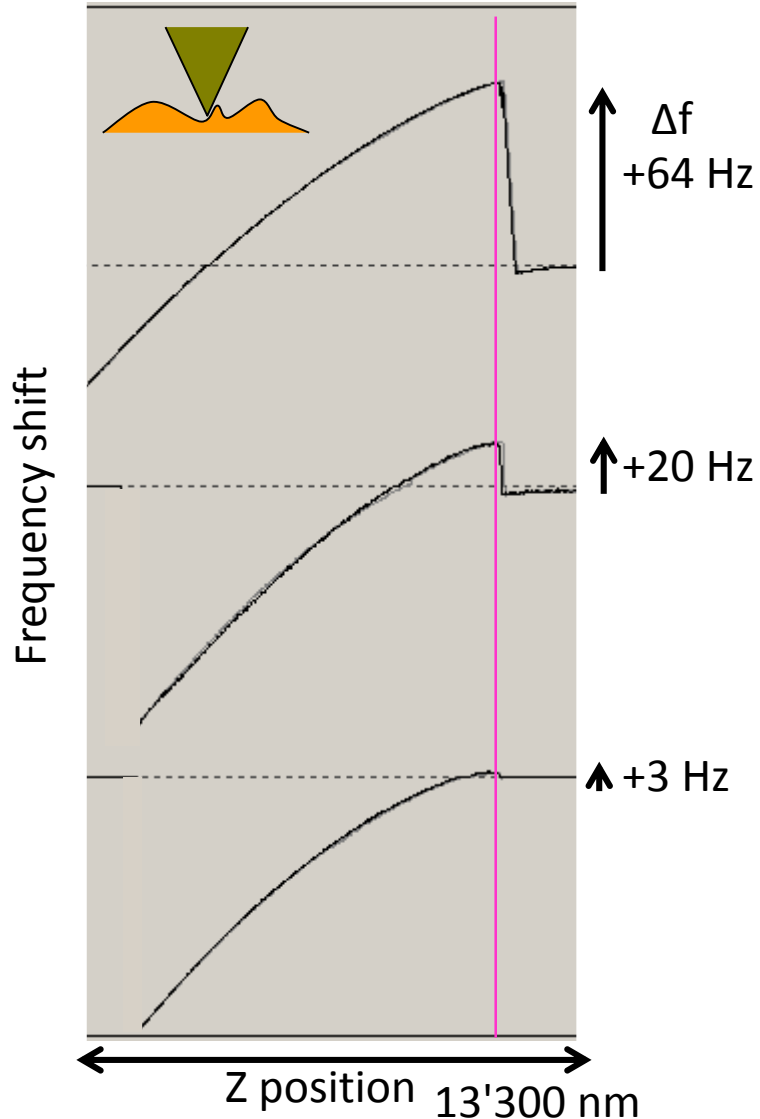
## Quasi contact mode



- ❑ The recommended operation mode for Akiyama-Probe is dynamic mode in the periodic contact region, where the resonance frequency increases as the tip moves closer to the sample.
- ❑ Beyond the periodic contact region, the resonance frequency gradually decreases as a function of tip-sample distance. This region lies over a couple of tens  $\mu\text{m}$  in z-direction, and called “quasi” contact region.



Approach curves of three different probes with different  $\Delta f$  values.



- ❑ In the quasi contact mode, the tip is always in contact, but the TF is still vibrating. Hence, one can measure an extremely large displacement, which is several hundreds of micro or more.
- ❑ The sensitivity, however, is not as high as that of the periodic contact mode. This region basically continues until the cantilever itself or the TF is directly touching the object.
- ❑ Akiyama-Probe operated in this mode could be used for *e.g.*, measuring displacement, the tip is strongly pushed onto the sample surface and, hence, operation in this region is not recommended for AFM imaging.