

- Electron cloud is an issue for the X-band MDR and low emittance transport system and the TESLA DR wigglers sections and arcs.
- Single-bunch instabilities and cloud generation simulations set SEY thresholds.
- Electron conditioning dose can be reached during few tens of hours of beam operations.
- Special surface profile design, the use of solenoid field and larger vacuum chamber radii may suppress the effect.



(Left) Cloud density as a function of the peak secondary electron yield (SEY) in the NLC positron damping ring. (Center) Fast head-tail instability in the NLC and TESLA (Right) damping rings.



(Left) Electron trapping in quadrupole region. (Right) Snapshot of electrons distribution in TESLA wiggler.



Measurements of SEY at SLAC.



TiN and TiZrV surface recontamination



Special surface profile design. Secondary Yield reduction ~35%