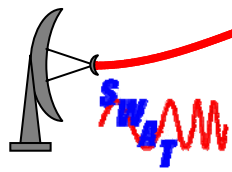
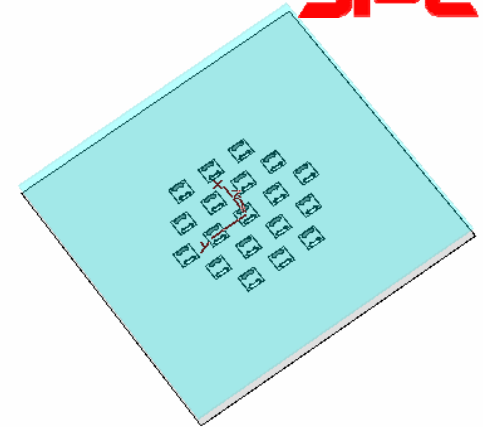
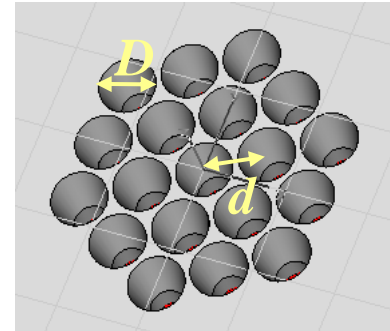




# THz Imaging Arrays (Caltech/JPL)



**Program:** New program to develop front-end antenna and transceiver technologies for realizing THz imaging arrays. Partially sponsored by Navy Explosive Ordnance Division and DARPA. With Ali Hajimiri (Caltech), Nuria Lombart (Caltech PD), Alvaro Gonzalez (Caltech GS) & SWAT (JPL)

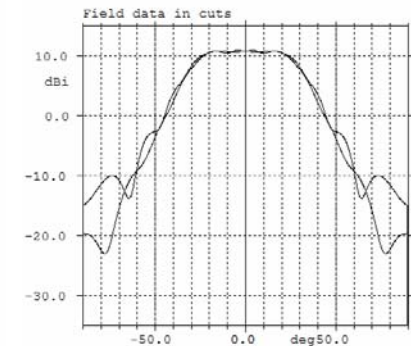
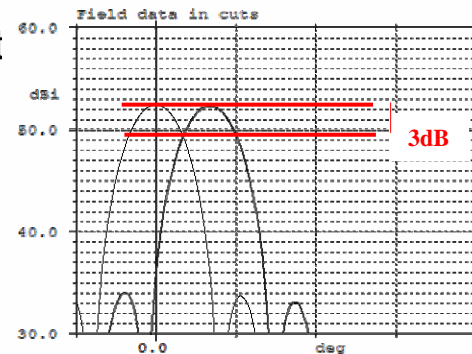
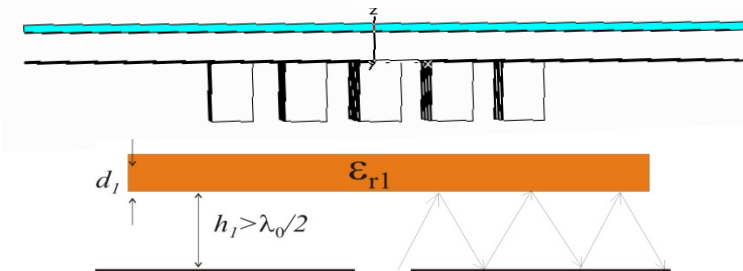


**Underlying Technology:** Micromachined silicon waveguide structures, new photonic band gap beam forming structures, CMOS circuitry.

**State-of-the-Art:** Fully sampled 2D arrays with high beam efficiency have never been realized at THz wavelengths.

**Major Accomplishments to date:**

- Designed a fully sampled focal plane array with f1 optics, secondary resonant beam forming and Gregorian primary for scanned 2D array
- Additional work just starting.



New concept where a dielectric cap layer is used to increase the effective directivity of a circular waveguide array in order to achieve 3dB sampling