

## Scattering results for hexagonal prism

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### Programmes

- Superellipsoid Scattering Tool (SScaTT) based on Nullfield Method with Discrete Sources (NFM-DS)
- CST Microwave Studio Version 5 (CST MWS)

### Scattering problem

hexagonal prism

$l = 2\mu\text{m}$  (rectangular face to rectangular face)

$d = 1.15471\mu\text{m}$  (hexagonal face to hexagonal face)

$n = 1.5$

$\lambda = 628.319\text{nm}$

unit amplitude incident plane wave

plane wave normal  $x=0, y=0, z=1$

incident polarization E field vector: H:  $x=0, y=1, z=0$

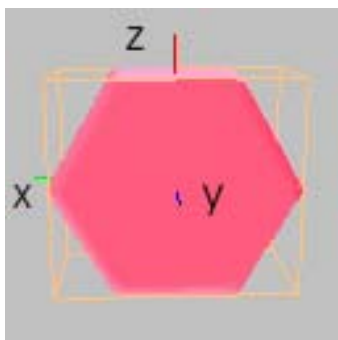
V:  $x=1, y=0, z=0$

scattering plane  $z, y$

plotted results: differential scattering cross section DSCS  $\sigma$  normalized by arbitrary constant

$\sigma_{HH} = |E_H|^2$  with incident H polarization

$\sigma_{VV} = |E_V|^2$  with incident V polarization

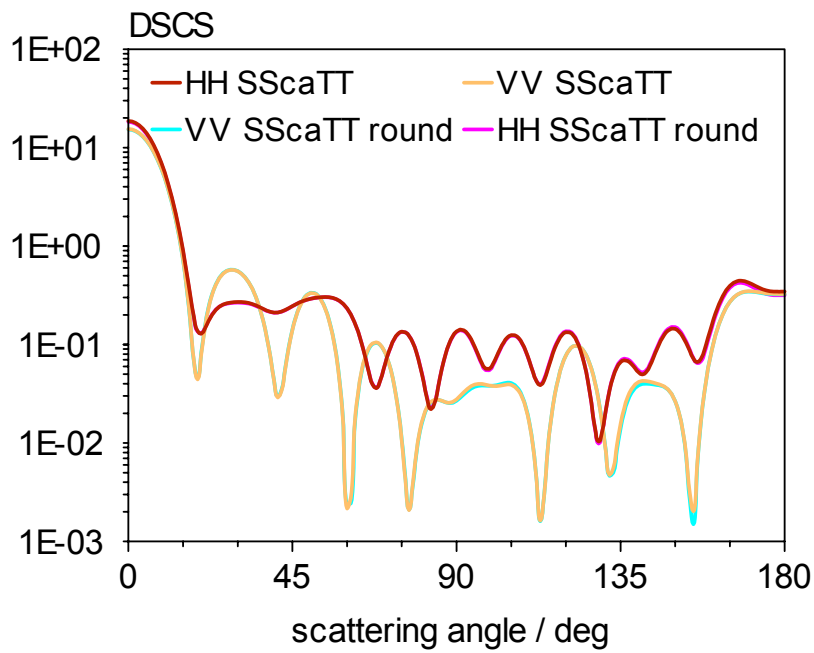


### Computational parameters and computer time (with WINXP, Pentium 4, 3 GHz, 2 GByte)

SScaTT:  $N=24, M=18, 21504$  faces, RAM max : 94MB, 4.5h (in total for all incident polarizations and directions)

CST: grid  $\lambda/25, 1.498.000$  cells, RAM max: 463 MB, 40 mins (for every incident polarizations)

### Scattering results hexagonal prism versus rounded prism



### Scattering results

