

## status of ongoing activities (FZ, 06/06/2003)

- new version of E-CLOUD (D. Schulte) to be posted
- simulation of SR radiation in the LHC (with A. Rossi):  
(1) MADX database contains apertures only for a few percent of the elements (no apertures for drifts), will add values 'by hand'; (2) initial MADX problems with orbit correction (default gives no solution; also the twiss and plot commands do no longer respond after correcting the orbit); next: modify & run PHOTON code
- e- cloud at collimators; just received FLUKA results from A. Ferrari (1 keV cutoff, tracks weighted with  $1/\cos\theta$ ); next: estimate number of low-energetic electrons or perform simulations with KEK EGS program (H. Hirayama; recommended by N. Mokhov).
- 'observe' scrubbing run
- reflection of  $\mu$ -waves by inhom. e- plasma (F. Caspers)

in metal

$$\left( -\frac{\hbar^2}{2m} \frac{d^2}{dx^2} - V_0 \right) \phi = E \phi$$

in vacuum

$$\left( -\frac{\hbar^2}{2m} \frac{d^2}{dx^2} \right) \phi = E \phi$$

$$\phi_{\text{vacuum}} = A e^{ikx} + B e^{-ikx}$$

$$\phi_{\text{metal}} = C e^{ilx}$$

$$k = \sqrt{\frac{2mE}{\hbar^2}}$$

$$l = \sqrt{\frac{2m(E + V_0)}{\hbar^2}}$$

continuity of  $\phi$  and  $d\phi/dx$  at  $x = 0$  yields

$$R = \frac{|B|^2}{|A|^2} = \left( \frac{\sqrt{E + V_0} - \sqrt{E}}{\sqrt{E + V_0} + \sqrt{E}} \right)^2 \approx 1 \quad \text{for} \quad E \rightarrow 0$$

