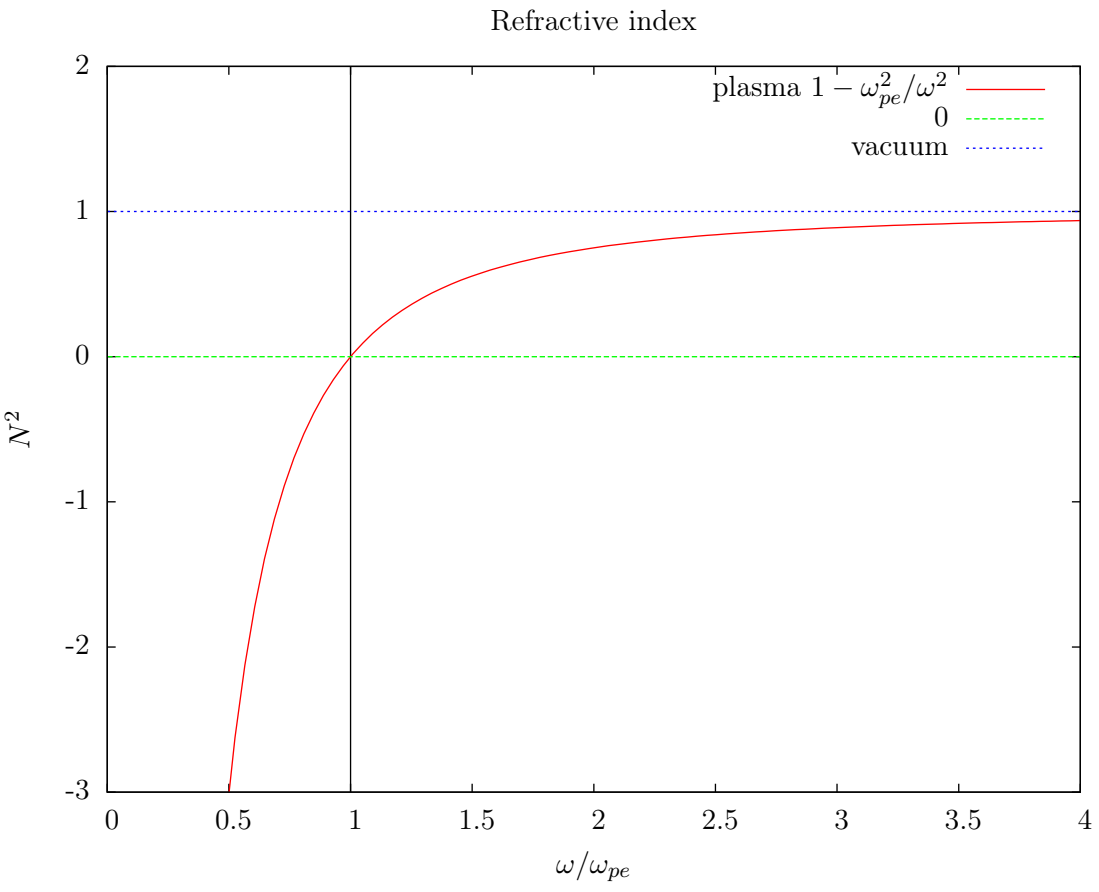
The index of refraction



- is always smaller than 1,
- decreases as density increases,
- wave only propagates when $\omega > \omega_{pe}$,
- for every wave frequency ω there is a *critical density*

$$n_c = \frac{\varepsilon_0 m}{e^2}\omega^2$$

which is the highest density that allows the wave to propagate.