

Lens of a bubble of ionized gas

The circle in the diagram above shows a bubble of ionized gas, the bubble can contain a galaxy, or even a galaxy cluster, Therefore, when assessing the effect of a gravitational lens galaxies or galaxy clusters to estimate the mass of the galaxy or cluster of galaxies, deduct the lens effect of a bubble ionized gas.

The formula gives a good approximation the refractive index n of an ionized medium is:

$$n = [1 - (N \cdot 81) / \{F^2 (10)^{12}\}]^{1/2}$$

N is the number density of electrons in electron per cubic meter,

F being the frequency of oscillation of electrons that receives the energy of a wave MHZ Reference (for formula):

Terms of ionospheric reflection of a wave

<http://f5zv.pagesperso-orange.fr/RADIO/RM/RM10/RM10E04.html>

