

**Surface shadowing's effects on the scattering from rough surfaces****Author(s):** F Salehi , SF Masoudi , GR Jafari**Study Type:** Research | **Subject:** Original Research**Article abstract:**

In the wave scattering from rough surfaces investigated by using the surface morphology and the vertical AFM, in general the correct and complete results cannot be obtained. If the roughness with respect to the wavelength is more than a critical limit, the theoretical calculation is not the same as the experimental data, and this inequality cannot be corrected without considering the shadowing effect. In this paper, instead of direct considering of the shadowing effect on scattering equations, we investigated its effect on the surface characteristics. If the shadowing exists, some parts of the surface cannot be seen depending on the incident angle and the wavelength. In this study, the effects of the shadowing on the surface characteristics of a self-affine experimental sample were investigated under the Born approximation.

**Keywords:** wave scattering, rough surfaces, shadowing effect,