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PS2-15: Rainbow Scattering of Neutral Atoms by the Crystal Surface

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The features of the angular distributions of accelerated neutral atoms at grazing incidence on the surface of Al (001) [1,2] are theoretically investigated. Interaction of accelerated atoms with atoms of the crystal lattice, electronic properties and atomic structure of the surface of the Al (001) are calculated using the DFT methods. Simulation of angular distributions of scattered atoms performed taking into account the interaction of atoms with several layers of atoms in the crystal lattice. It is found that the effect on rainbow scattering is significantly affected by the relaxation of the surface layers of the crystal, i.e. unlike the distances between the planes at the surface and in the volume. The possibilities of using the effect of rainbow scattering for the study of structural features of the crystal surface have been discussed.

References

1. A. Schuller, H. Winter. NIM , B 267 (2009) 2621.
2. V.S. Malyshevsky. NIM , B 309 (2013) 151.

Primary author: Mr MALYSHEVSKY, Vyacheslav (Southern Federal University, 344090, Rostov-on-Don, Russia)

Co-authors: Dr FOMIN, Georg (Southern Federal University, Rostov-on-Don, Russia); Dr AVAKYAN, Leon (Southern Federal University, Rostov-on-Don, Russia); Mrs ZHILINA, Tatyana (Southern Federal University, Rostov-on-Don, Russia)

Presenter: Mr MALYSHEVSKY, Vyacheslav (Southern Federal University, 344090, Rostov-on-Don, Russia)

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