

# FEATURIES OF INTERACTION OF A PROJECTILE WITH A SOLID

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The motion of quantum particle within uniform solid is considered in condition when the elementary excitations can be generated. With the help of the density matrix (DM)  $\Gamma(\vec{x}_1, \vec{x}_2, t)$  calculation the analysis of the projectile's wave field (WF) is performed. The creation of specific resonances is obtained. Note, DM depends on six space variables and its form after some short time of interaction with environment presents sufficiently complex. Certain considerations to give physical meaning to the various properties of the MP were made in [1]. In particular, the dependence of DM on the variable  $\vec{x} = \vec{x}_1 - \vec{x}_2$  defines the coherence length in WF. The calculation performed in [2] allows to represent a possible explanation of breaking the WF. However, some details of DM remain at present, unappreciated and further work remains to be done to detect and use of all information contained in DM. In the present work some particular properties of DM will be discussed.

1. G.M. Filippov.// Nuclear Instruments and Methods in Physics Research. 2014. V.B 326 P.48.
2. G.M. Filippov.// NUCLEAR THEORY. 2018. V. 37. P.196.