IMPACT OF LONG ROD KINETIC ENERGY PENETRATORS AGAINST ACTIVE PROTECTION SYSTEMS

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Protection of ground vehicles, and mounted personnel in particular, has always been a key issue. Increasingly it has been recognized that various armoured vehicles have a weight problem when faced with the challenges of sufficient ballistic protection.

Active Protection Systems (APS) has the potential of providing adequate ballistic protection for various kinds of armored vehicles without a great weight penalty. The reactive protection is in general applied as add-on armoring in form of modules initiated at impact of the threat.

The hard kill systems directly impact the threat by e.g. blast, fragments, shape charges, EFPs, flying bars or plates resulting in the destruction or degradation of the threat. However, few, if any, APS claim to be effective against large KE-penetrators.

This paper examines the phenomena that occur when the ballistic protection interacts with a long rod KE-penetrator. Numerical simulations are performed to investigate wave propagation, local deformation and fragmentation of the long rod as a function of the protection system.