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**Einladung zum Seminarvortrag**

**Referent: Prof. Andrei K. Abramian**

Russian Academy of Sciences, St. Petersburg

**Thema: Destruction of thin films with a damaged adhesive**

**substrate as a result of wave localization**

**Abstract:** Some types of a laminated safety glass consist of an interlayer surrounded by two thin films.

An optimal level of adhesion is then required for the safety glass to absorb enough of the impact energy to prevent projectile penetration and delamination. Such considerations have motivated us to study the behavior of such structures undergoing strike like loading and introduce the mathematical model of the structure behavior. The structure under consideration is modeled as a string (cut from a thin film), an elastic foundation, which is assumed to be imperfect, and which coefficient depends on a damage function of a substrate. The imperfection of an elastic foundation is modeled by a damage function for which the evolution equation is introduced.

Main effects exhibited by the suggested model are as follows:

1. The damage zone in substrate can cause the non-stationary wave localization in

it. There is an incubation period before the destruction process starts.

2. A sequence of resonances has been found for a periodic strike like loading.

3. There are possible transitions between destruction types and two types of the front dynamics.

4. Three scenarios of the damaged function behavior have been found: a monotone growth of it; a piecewise like type and no growth.

**Zeit: Montag, 14. September 2015, 15:00 Uhr**

**Ort: Sitzungsraum, R. 206.3, 2. OG, Geb. 10.23**