# Radiation induced damage in ductile materials subjected to time-dependent stresses

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Physically based multi-scale constitutive model comprising evolution of radiation induced damage in ductile materials subjected to periodic stress states in the inelastic range is formulated. The evolution of radiation induced damage is combined with the evolution of classical micro-damage of mechanical origin within the common framework of CDM. Kinetics of radiation induced damage involves the Rice & Tracey and the extended type Gurson laws. Closed form analytical solutions for the problem of periodic irradiation combined with cyclic loads were obtained.