

Abstract Submitted  
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**A computational atomistic study of the relaxation of ion-bombarded *c*-Si on experimental time-scales: an application of the kinetic Activation Relaxation Technique** LAURENT KARIM BÉLAND, NORMAND MOUSSEAU, Dept. de physique and RQMP, Université de Montréal, Canada — The kinetic activation relaxation technique (kinetic ART) method, an off-lattice, self-learning kinetic Monte Carlo (KMC) algorithm with on-the-fly event search,<sup>1</sup> is used to study the relaxation of *c*-Si after Si<sup>-</sup> bombardment at 3 keV. We describe the evolution of the damaged areas at room-temperature and above for periods of the order of seconds, treating long-range elastic deformations exactly. We assess the stability of the nanoscale structures formed by the damage cascade and the mechanisms that govern post-implantation annealing.

<sup>1</sup>L. K. Béland, P. Brommer, F. El-Mellouhi, J.-F. Joly and N. Mousseau, Phys. Rev. E **84**, 046704 (2011).

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