DYNECHARM++
a software to simulate the motion of charged particles in complex atomic structures

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Charged particle impinging onto a crystal with small angle with respect to an atomic plane or axis can undergo planar or axial channeling regime with high probability. Trajectory of a ultra-relativistic particle under channeling regime can be studied through the usage of continuous potential approximation [1] and approximation of relativistic equations of motion [2]. Averaged electric field experienced by particles in their motion can be calculated through classical physical equations and the expansion of periodic functions as a Fourier series [3]. Based on these calculation methods we have developed the DYNECHARM++ code, which allows to integrate the particle equations of motion under channeling regime inside a complex atomic structures. The code has been written in C++ programming language to simplify the integration within other software. Comparison between simulations and experimental results have been carried out.

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