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General Framework for statistical tracer analysis as a diagnostic for turbulent transport in gyrokinetic codes JOSE-MIGUEL REYNOLDS-BARREDO, JORGE-ALBERTO ALCUSON, RAUL SANCHEZ, VICTOR TRIBALDOS, Universidad Carlos III de Madrid, DAVID NEWMAN, University of Alaska Fairbanks — It has been known for a long time that tracers can be useful tools to characterize the nature of transport. On the other side, several state-of-the art gyrokinetic codes exist (GENE, GYSELA, UCAN...) that offer us a rich variety of turbulent data to analyze, that belongs to regimes of interest for the nuclear fusion program. Advancing tracers in these codes is not easy. It would be best if they could be advanced in parallel with the turbulence. However, gyrokinetic runs are very expensive and one cannot afford to repeat runs to relocate tracer particles in another location, or to repeat their initialization. For that reason, it is better to develop an independent tool that can read the turbulence information from gyrokinetic runs stored in file, and then spline it in time and space as needed to carry out as many tracer studies as desired. In this contribution, we present such a framework. It has been developed in FORTRAN90 and accepts input from all the aforementioned codes, including both the electrostatic potential and the magnetic field configurations. Tracers can be advected considering either of the following effects: ExB drifts, magnetic drifts, parallel motion, etc. Preliminary effects of the use of the tool with several GK codes will be presented.

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