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Commentary

Measurement of Radiation by Synthetic Diamond

—Development of Advanced Radiation Detectors for Fusion Plasma Diagnostics—

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Materials Processing in Reactive Plasmas Accompanied by Heat Flow

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Adiabatic invariance is very useful in nonlinear wave-particle interaction theory for calculating effects like the ponderomotive force on untrapped oscillation-center orbits. However, if a particle gets trapped in a wave trough its oscillation-center velocity becomes that of the wave (i.e. zero in the wave frame). The figure shows the trapping of two particles launched with the same initial wave-frame energy but spatially separated by less than a wavelength. Remarkably, a suitably defined invariant is conserved even through such trapping events. (Robert L. DEWAR and Justin C.-C. YAP, Plasma and Fusion Research Vol.4, 001 (2009) <http://www.jspf.or.jp/PFR/>)



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3-1-1, Uchiyama, Chikusa-ku, Nagoya 464-0075, Japan

Tel 052-735-3185, Fax 052-735-3485, E-mail: plasma@jspf.or.jp, URL: <http://www.jspf.or.jp/>