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Time-dependent radiation drive asymmetry compensation of inertial fusion capsules by ablator doping STEPHEN SLUTZ, ROGER VESEY, MARK HERRMANN, Sandia National Labs — Ablator doping, the process of adding small amounts of specific materials to tailor the opacity of the ablator, is shown to be an effective means of compensating for radiation drive asymmetries. As an example, an inertial fusion capsule with a beryllium ablator variably doped with gold has been designed to compensate for a P_2 radiation asymmetry of 20% and still produce nominal fusion yield. In contrast, the same capsule without variable doping, fails when the P_2 asymmetry exceeds 2%. The technique can compensate time-dependent asymmetries by varying the doping as a function of depth within the ablator. We also show that doping can compensate for high levels of other low order modes, e.g. P_1, P_4, and P_6radiation asymmetries.

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