

Abstract Submitted  
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**Characterization of the hot electron population with bremsstrahlung and backscatter measurements at the National Ignition Facility**<sup>1</sup> FELICIE ALBERT, MATTHIAS HOHENBERGER, PIERRE MICHEL, LAURENT DIVOL, TILO DOEPPNER, EDWARD DEWALD, BENJAMIN BACHMANN, JOSEPH RALPH, DAVID TURNBULL, CLEMENT GOYON, CLIFF THOMAS, OTTO LANDEN, JOHN MOODY, Lawrence Livermore National Laboratory — In indirect-drive ignition experiments, the hot electron population, produced by laser-plasma interactions, can be inferred from the bremsstrahlung generated by the interaction of the hot electrons with the target. At the National Ignition Facility (NIF), the upgraded filter-fluorescer x-ray diagnostic (FFLEX), a 10-channel, time-resolved hard x-ray spectrometer operating in the 20- to 500-keV range, provides measurements of the bremsstrahlung spectrum. It typically shows a two-temperature distribution of the hot electron population inside the hohlraum. In SRS, where the laser is coupled to an electron plasma wave, the backscattered spectrum, measured with the NIF full-aperture backscatter system (FABS), is used to infer the plasma wave phase velocity. We will present FFLEX time-integrated and time-resolved measurements of the hot electron population low-temperature component. We will correlate them with electron plasma wave phase velocities inferred from FABS spectra for a range of recent shots performed at the National Ignition Facility.

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