Extracting electron energy distributions from PFRC X-ray spectra

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The PFRC is an odd-parity Rotating Magnetic Field (RMF) driven Field-Reversed Configuration plasma confinement experiment equipped with Si-PIN and SDD x-ray detectors. It is predicted that the electron energy distribution is non-thermal when the RMF is active. Using a novel Poisson-regularized inversion technique, we present full electron distribution functions as obtained ("spectrally inverted") from the x-ray Bremsstrahlung emissions. We present the results of high-power, long-pulse FRCs with measured temperatures of 50 eV – 150eV.