Abstract Submitted
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Bent crystals for x-ray diagnostics evaluated with synchrotron radiation[1] NINO PEREIRA, Ecopulse, Inc, AL MACRANDER, Advanced Photon Source, WOODY VANDERVORT, HEATH LEFEVRE, University of Michigan, ELENA BARONOVA, Kurchatov Institute, Moscow, Russia — The bent crystals that are used extensively in plasma x-ray spectroscopy are usually assumed to reflect x-rays in substantially the same way as flat crystals. The x-rays diffract coherently from specific crystal planes, which are assumed to bend as in an isotropic solid. While these assumptions are valid enough for many practical purposes, detailed measurements on typical bent crystals obtainable at a synchrotron show that x-ray reflection from bent crystals may have interesting features that deviate from the ideal. This paper presents some of the measurements done recently on various bent crystals, some used and some newly made, and discusses their possible relevance for the interpretation of bent-crystal based x-ray diagnostics.

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