Abstract Submitted
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Time-dependent measurements of the B, C, N, and O Lyman-α emission[1] P. BEIERSDORFER, M.-F. GU, LLNL, M. BITTER, K.W. HILL, R. KAITA, H. KUGEL, L. ROQUEMORE, PPPL, J.K. LEPSON, UC Berkeley — The X-ray and Extreme Ultraviolet Spectrometer (XEUS) has been used to monitor the line emission from various impurity ions on NSTX, in particular the K-shell emission of heliumlike and hydrogenlike B, C, N, and O. While C VI typically dominates the spectrum, unusually strong emission from N VII has been observed in multiple disharges during the past run campaign. In this case, the nitrogen concentration can exceed that of carbon by an order of magnitude. Time-dependent measurements show that the nitrogen concentration builds up over the course of the discharge and coincides with a build up of boron. In a few cases we observed several unknown lines. These are clearly lines from heavy impurities, possibly molybdenum. Some of these lines can be explained by the emission from Ti XIII.

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