**Suppression of Large Type-1 ELM Activity by the Deposition of Lithium on the NSTX Graphite Divertor Surfaces***

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During the 2007 NSTX experimental campaign, elemental lithium films were deposited on plasma facing components, particularly onto the NSTX lower divertor plates, using an evaporator. During the initial use of the lithium evaporator (i.e. in going from plasma operation with unconditioned carbon as the plasma facing material to operation with a lithium-on-carbon film) a clear change in plasma performance was observed. As the quantity of deposited lithium increased, the lower-single-null deuterium discharges that had previously exhibited reproducible and robust Type-1 ELMs with uncoated carbon (2-3 sequential discharges) gradually transformed into discharges with smaller and less frequent Type-1 ELMs, accompanied by some low-level high-frequency components (another 3-4 sequential discharges), and finally into 2-3 sequential discharges in which all ELMs were completely eliminated. The observed suppression of ELMing activity may be linked to changes in the discharges immediately after the H-mode transition as well as to a large ELM initiating event.

During this progressive transformation, other discharge parameters changed in a complicated manner. As the ELMs gradually disappeared, energy confinement improved and MHD activity decreased, but neither changed in a monotonic manner as the lithium coating was increased. These results gave the first indication that active modification of the plasma surface interaction can preempt large ELM activity and have motivated the installation of a second lithium evaporator to improve coverage of the divertor with lithium and thereby, it is hoped, to enhance our ability to modify the plasma surface interaction.

These observations as well other phenomenology associated with the mitigation of ELMS via conditioning of plasma facing components will be discussed.

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