Abstract Submitted
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Progress on ITER Diagnostic Integration[1] DAVID JOHNSON, RUSS FEDER, JONATHAN KLABACHA, DOUG LOESSER, MIKE MESSINEO, BRENTLEY STRATTON, RICK WOOD, YUHU ZHAI, Princeton Plasma Physics Laboratory, PHILLIP ANDREW, ROBIN BARNSLEY, GUENTER BERTSCHINGER, MAARTEN DEBOCK, ROGER REICHLE, VICTOR UDINTSEV, GEORGE VAYAKIS, CHRISTOPHER WATTS, MICHAEL WALSH, ITER Organization — On ITER, front-end components must operate reliably in a hostile environment. Many will be housed in massive port plugs, which also shield the machine from radiation. Multiple diagnostics reside in a single plug, presenting new challenges for developers. Front-end components must tolerate thermally–induced stresses, disruption-induced mechanical loads, stray ECH radiation, displacement damage, and degradation due to plasma-induced coatings. The impact of failures is amplified due to the difficulty in performing robotic maintenance on these large structures. Motivated by needs to minimize disruption loads on the plugs, standardize the handling of shield modules, and decouple the parallel efforts of the many parties, the packaging strategy for diagnostics has recently focused on the use of 3 vertical shield modules inserted from the plasma side into each equatorial plug structure. At the front of each is a detachable first wall element with customized apertures. Progress on US equatorial and upper plugs will be used as examples, including the layout of components in the interspace and port cell regions.

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