# IOS-4.2 \* dependence on transport & stability in advanced inductive scenarios

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| **TG priority:** High | **Start date:** 2010 | **Status:**  On-going | **Personnel exchange:**  Yes |
| **IO priority:** | **End date:** 2016 | **Motivation:** Physics Basis | |

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| **Device /**  **Association** | **Contact**  **Persons** | **2016 TG Request** | **Activity (from JEX/JA spreadsheet)** | | | | |
| **2012** | **2013** | **2014** | **2015** | **2016** |
| JET | C. Challis | Essential | Committed | Committed | Analysis | Committed |  |
| DIII-D | T. Luce | Essential | Analysis | Analysis | Analysis | Analysis |  |
| AUG | J. Hobirk | Essential | Committed | Committed | Considering | Committed |  |

**Purpose**

Advanced inductive discharges in different experiments allow coordinated studies on to the effect of \* on confinement and stability of this regime. The aim of these experiments is:

* To make identity experiments at the same \* for detailed transport studies (with common and improved diagnostics) for advanced inductive plasmas aimed at the hybrid mission for ITER at q95=4.
* To get the largest possible variation in \* for confinement scaling and stability boundary scaling studies. Data from these experiments should be included in the global confinement database, to take advantage of the operational capabilities of this regime (high beta).

**Results for 2015**

* Analysis is on-going for DIII-D/JET-C data—some difficulty in obtaining good matches
* Analysis of AUG-W/JET-ILW data. Profile matches appear good for the identity point, but ability of both machines to extend \* in either direction appears limited.

**Plans for 2016**

* Publication of DIII-D/JET \* scaling experiment. Slight possibility of additional DIII-D experiments to improve the match.
* Complete analysis of JET/AUG identity comparison. Publish separate from the DIII-D/JET-C analysis. Possible additional experiments to try to extend the range in \* in both machines.