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## **[5] Towards predicting plasma confinement in fusion devices**

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It is a key goal of fusion research to build devices that allow us to create a plasma at sufficiently high pressure and energy confinement time, so that the conditions for a burning plasma can be met. For a long time, progress along these lines was largely based on a “trial-and-error” approach. With the preparation of ITER operation and attempts to design first versions of future fusion power plants, it became clear that a more targeted “predict-first” approach is needed to accelerate the further development of fusion energy. Modern supercomputers open up new possibilities to solve the complex underlying equations, allowing us to move from an interpretative to a truly predictive approach. So how and when will we be able to predict plasma confinement in fusion devices?

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