# Challenges for Fusion Theory

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Turbulence, beta limits and technology limits have driven fusion research to larger and larger size machines. Smaller, cheaper and simpler reactors are certainly preferable — and they require improvements in plasma performance. There is clear evidence for improved confinement regimes — but still no predictive theory. Reduced turbulence, while desirable, often results in explosive instability — but not inevitably. I will discuss the physics of these challenges.