Accelerated lifetime tests of ITER-like tungsten monoblocks in Magnum-PSI (T.W. Morgan et al.)

1. W Mock-up chain exposed to combined plasma and up to $10^6$ ELM-like (laser) pulses in Magnum-PSI

2. Comparing to similar e-beam data indicates additional effects due to plasma (surface modifications, “rounded” roughened surfaces)

3. Increasing surface base temperature leads to a decrease in resistance to fatigue cracking

4. Seeding impurities increase surface roughening compared to pure H discharges

5. Results indicate importance of plasma effects on fatigue damage of W

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