

Abstract Submitted
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Verification and optimization of the CFETR baseline scenario¹ D. ZHAO, ORAU, L.L. LAO, O. MENEHINI, G.M. STAEBLER, J. CANDY, S.P. SMITH, P.B. SNYDER, R. PRATER, X. CHEN, GA, V.S. CHAN, USTC, J. LI, J. CHEN, N. SHI, W. GUO, C. PAN, ASIPP, X. JIAN, HUST — The baseline scenario of China Fusion Engineering Test Reactor (CFETR) was designed starting from 0D calculations. The CFETR baseline scenario satisfies the minimum goal of Fusion Nuclear Science Facility aimed at bridging the gaps between ITER and DEMO. 1.5D calculations are presented to verify the on-going efforts in higher-dimensional modeling of CFETR. Steady-state scenarios are calculated self-consistently by the OMFIT integrated modeling framework that includes EFIT for equilibrium, ONETWO for sources and current, TGYRO for transport. With 68MW of neutral beam power and 8MW of ECH injected to the plasma, the average ion temperature $\langle T_i \rangle$ is maintained at 15keV, while 150MW fusion power is produced. The neutral beams also drive 55% of the plasma current. Modest fast ion diffusion will reduce NBCD and affect the profile substantially. Top-launch ECH will increase the current drive and the power absorption rate. EPED model are being included.

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