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Bootstrap current for a deuterium-tritium mixture[1] FELIX I. PARRA, MICHAEL BARNES, PETER J. CATTO, Plasma Science and Fusion Center, MIT, Cambridge, MA — The parallel current is calculated analytically for tokamak plasmas with two ion species and electrons in the large aspect ratio limit using the full Fokker-Planck collision operators. Two collisionality limits are considered: the plateau and the banana regime. This calculation gives the bootstrap current for a deuterium-tritium mixture. The bootstrap current not only depends on the total pressure gradient and the electron and ion temperature density gradients, but it also contains a term proportional to the difference between the deuterium density gradient and the tritium density gradient. The consequences for a reactor will be discussed.

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