The bootstrap current in the H-mode pedestal has been studied with the global, gyrokinetic-neoclassical code XGCa.

Contrary to conventional neoclassical theory, the trapped particle contribution to the bootstrap current can be significant in realistic tokamak geometry, especially in spherical tokamaks.

A new bootstrap current formula valid for the H-mode pedestal has been developed based on numerous XGCa simulations in different realistic, diverted tokamak equilibria. It includes corrections for large trapped particle fraction and finite orbit-width effects.