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Current filaments in magnetized plasmas N. VIANELLO, M. SPO-
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I. FURNO, C. THEILER, CRPP-EPFL, Euratom Confederation Suisse, Lausanne,
Switzerland — We present direct experimental evidence of the presence of filamen-
tary current structures in turbulent magnetized plasmas. Experiments have been
performed in different devices. In the the reversed field pinch RFX-mod device, small
scales turbulent intermittent structures, have been interpreted as Drift-Kinetic Alfvén
vortices, resulting from the non-linear coupling of drift and Kinetic Alfvén waves,
with a bipolar current filaments associated to a vorticity perturbation. In thee AS-
DEX Upgrade tokamak evidences of monopolar current filaments travelling in the
SOL, have been observed in correspondance with type-I ELMs. An evaluation of the
current carried by individual ELMs is presented. Finally preliminary direct mea-
surements of the 2D structure of the blob-induced parallel current using magnetic
probes, as obtain in the simple magnetized plasma TORPEX, will be presented.

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