
Article:
Finizio, S orcid.org/0000-0002-1792-0626, Wintz, S orcid.org/0000-0001-6138-8078, Mayr, S orcid.org/0000-0003-4614-9874 et al. (6 more authors) (2020) Time-resolved visualization of the magnetization canting induced by field-like spin-orbit torques. Applied Physics Letters, 117. 212404. ISSN 0003-6951

https://doi.org/10.1063/5.0029816

SUPPLEMENTARY INFORMATION: Time-resolved visualization of the magnetization canting induced by field-like spin-orbit torques

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(Dated: October 27, 2020)

Effect of the current-induced heating on the calculated FL-SOT canting angle

In this section, we show the calculated value of the FL-SOT canting angle in the time during which no current pulse is applied to the Pt/CoB/Ir microwire, but during which the heating caused by the injection of the current pulse has not yet completely dissipated. Such calculation is shown in Fig. S1, and it is possible to observe the absence of a clear canting of the magnetization.

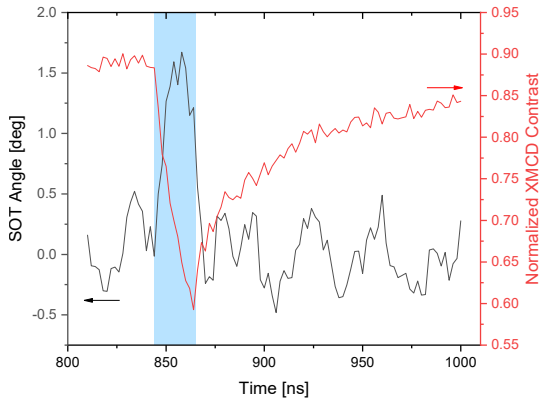

Figure S1. Calculation of the canting angle induced by the field-like SOT in a Pt/CoB/Ir microwire (black curve). The red curve shows the normalized XMCD contrast, allowing to identify the time regions where the current pulse is applied (marked by the light blue background), and where the heating induced by the current pulse is still being dissipated. No clear canting of the magnetization can be observed outside of the period during which the current pulse is injected across the Pt/CoB/Ir microwire.

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