ESRF	Experiment title:  Magnetization dynamics in cerium-based multilayers probed by nanosecond-resolved XMCD	Experiment number: HE-722
Beamline:	Date of experiment: from: to:	Date of report:
Shifts:	Local contact(s): T. Neisius	Received at ESRF:
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## Report:

The project is consisting of two parts: the study of the magnetization dynamics of Ce/Fe-multilayer at room temperature and a temperature dependent experiment of  $CeH_x/Fe$ -multilayer, respectively.

We started with the measurement of the Ce/Fe-sample, because for the  $CeH_x$ /Fe-sample a suitable cryostat was not yet available.

The time resolved XMCD-signal was following exactly the magnetic field produced in the microcoil. This behaviour was not expected for the Ce/Fe-sample (Figure 1). A static measurement of the field dependence of the Ce-XMCD signal showed no coercitivity field for the Ce (Figure 2). This can only be explained by some amount of hydrogen inside the Ce-layer. After further investigations we found out that the sample were contaminated by hydrogen during the sputtering process.

We intend to repeat the experiment, because as the Figure 1 is showing the technical part of the experiment was working properly. For the sample preparation highest care has to be taken.

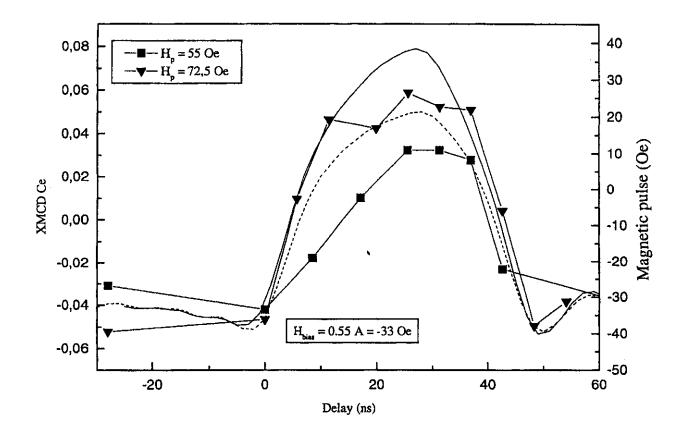


Figure 1

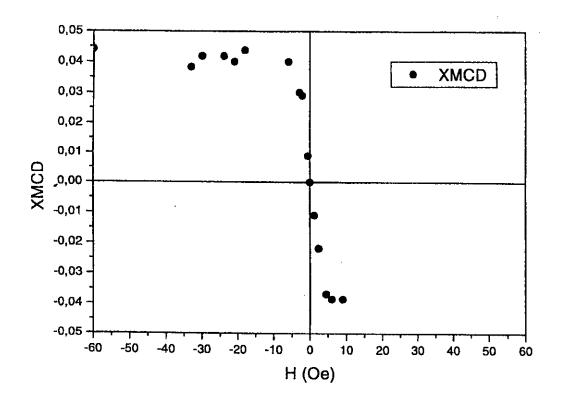


Figure 2