ESRF	**Experiment title: Local structure of Shape Memory Alloys: an X-Ray Absorption investigation**	**Experiment number**: **ME-1129**
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Shifts: 18	**Local contact(s)**: Dr. Gianluca Ciatto	*Received at ESRF:*

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Report:

The present experiment has been successfully performed and a paper reporting its results has been published in: **Applied Physics Letters**

Full reference details:

G. Ciatto, P. L. Solari, S. De Panfilis, A. L. Fiorini, S. Amadori, L. Pasquini and E. Bonetti, "Atomic ordering in CuZnAl shape memory alloys investigated via X-ray Absorption and Diffraction", ***Appl. Phys. Lett.*** 92, 241903 (2008)

Abstract:

We investigate the structure of the austenite phase in CuZnAl shape memory alloys by a combined x-ray absorption and diffraction analysis. *Ab initio* simulations of the near Zn-edge x-ray absorption coefficient allow us to directly discard the hypothesis of a DO_3 superstructure. At the same time, we give evidence of the existence of an ordered structure (*B*2-like) different from the $L2_1$ one recently proposed by neutron diffraction. However, some partial $L2_1$ ordering is present at room temperature. This superstructure develops and recovers order when increasing the temperature above 400 K.