

Abstract Submitted  
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**Growth morphology of ultra-thin Ni films on Pd (100)**<sup>1</sup> PATRICIO HÄBERLE, CAROLINA PARRA, UTFSM, Valparaiso — A series of thin Ni films with thicknesses between 0.2 ML to 13 ML were deposited on a Pd(100) substrate at room temperature (RT). Growth morphology was investigated using scanning tunneling microscopy (STM). The STM images indicate the existence of three different growth modes. Up to 6.5 ML, the films grow pseudomorphically, consistent with a face-centered tetragonal (fct) structure. From 6.5 ML to 10.5 ML a new interlayer distance of  $1.0 \pm 0.1 \text{ \AA}$  is established. The new structure is accompanied by the appearance of an arrangement of filaments on the top layer. These filaments are presumably related to a strain relief mechanism of the fct films. Finally above 10.5 ML the Ni films recover their face-centered cubic (fcc) lattice constants. The filaments evolve to form a net-like structure over the whole surface. Preliminary data indicates the magnetic properties of the layers are linked to the evolution of the film's structure.

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