1019-49-143   **Cristina Popovici*** (`cristina.popovici@ndsu.edu`), Department of Mathematics, 300 Minard Hall, North Dakota State University, Fargo, ND 58105. *The homogenization of energies arising in the van der Waals-Cahn-Hilliard theory of phase transitions.*

A Γ-convergence analysis for functionals of the type

$$u \mapsto \int_\Omega \left(\frac{1}{\varepsilon} W\left(\frac{x}{\varepsilon}, u(x) \right) + \varepsilon |\nabla u(x)|^2 \right) dx$$

where W is a two-well potential, $(0,1)^N$-periodic in its first variable, is undertaken in the vector-valued setting. Joint work with Irene Fonseca. (Received August 13, 2006)

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