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Pavel Drabek* (pdrabek@kma.zcu.cz), Department of Mathematics and NTIS, University of West Bohemia, Univerzitni 22, 306 14 Pilsen, Czech Rep. *Continua of local minimizers in a non smooth model of phase transitions.*

In this talk we discuss the structure of critical points of the functional J which represents the total free energy in models of phase transition and allows for the study of interesting phenomena such as *slow dynamics*. In particular we consider a non-classical choice for the double-well potential F . The discontinuity in F'' at ± 1 leads to the existence of multiple continua of critical points that are not present in the classical case $F \in C^2$. We show that the interior of these continua are local minima. The energy of these local minimizers is strictly greater than the global minimum of J . In particular, the existence of these continua leads to an alternative explanation for the slow dynamics observed in phase transition models. We introduce also generalizations to the p -Laplacian equations. This is joint work with Stephen B. Robinson from Wake Forest University, Winston-Salem, N. C. (Received September 17, 2012)