

Negative differential resistance in perforated superconductors

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In my talk I review theoretical and experimental results on negative differential resistance (see for example Fig. 1) in perforated superconductors [1-6] and its relation with peculiarities of the vortex motion in these systems.

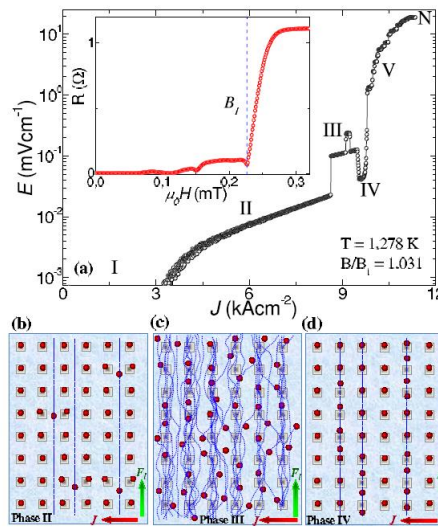


Fig.1. (a) Example of voltage-current characteristic $E(J)$ with a negative differential resistance branch (see transition from region III to IV). Results are obtained for perforated Al strip [2] at $T=1.236\text{K}$ near the first matching magnetic field. (b,c,d) - dynamical vortex phases correspond to regions II-IV on voltage-current characteristic in figure (a) (results are taken from [2]).

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