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Diverging Strains near Threshold: Breakdown of the Elastic Description of a Charge Density Wave Model

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Abstract: We analyze the strains near threshold in 1-d charge density wave models at zero temperature and strong pinning. We show that in these models local strains diverge near the depinning threshold and characterize the scaling behavior of the phenomenon. This helps quantify when the underlying elastic description breaks down and plastic effects have to be included.

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