If a phase transition is defined like a point where there is not a spatial scale invariance of the entropy density, then the phase transition have a universal definition: this happen in a system where there is an homogeneous system that changes in a small scale, with cluster of a phase that coexists with other cluster of phases (that could happen in parallel computing, thermodynamics, superconductivity, cosmology, biology,etc.).

I am thinking that if there not a scale invariance, then the propagation of some perturbation switches from transparency to translucence (optically, elastically, acoustically, etc.), and this can be a measure of phase change: for some frequencies the waves undergoes a diffraction because of the different refractive indexes of clusters with different phases.