



... Chaos is the place which serves to contain all things; for if this had not subsisted neither earth nor water nor the rest of the elements, nor the Universe as a whole, could have been constructed. ...

Sextus Empiricus, *Against the Physics, against the Ethicists*, R. G. Bury, p.217, Harvard University Press, 1997.

ON THE CRITERION OF STOCHASTIC STRUCTURE FORMATION IN RANDOM MEDIA

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It is shown that, in parametrically excited stochastic dynamic systems described by partial differential equations, spatial structures (clusters) can appear with probability one, i.e., almost in every system realization, due to rare events happened with probability approaching to zero. The problems of such type arise in hydrodynamics, magnetohydrodynamics, physics of plasma, astrophysics, and radiophysics. The general theory is illustrated by the examples of specific physical problems.