Dissipative flows and bifurcations of global attractors

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We study bifurcations of dissipative flows in which a global attractor becomes a non-global attractor after a small perturbation of the flow. Using Conley's index theory, we examine the mechanism which produces this phenomenon and we identify a dynamical property which is responsible for this bifurcation and analyze the topological features of some isolated invariant sets generated throughout this process. On the other hand we show that global attractors continue to global attractors if and only if the family of flows is uniformly dissipative. We illustrate this property with the flow induced by the Lorenz equations and their global attractors.