



Fig. 3 Objective vs design iterations for the **isogrid-stiffened imperfect** shell for the last of a series of four executions of the GENOPT processor called **SUPEROPT**. Each “spike” in the plot corresponds to a new starting design, obtained randomly as described in [15]. The presence of the three “dense”, “quiet” regions starting approximately at Iteration Numbers 150, 325, and 440, is explained in Section 9 on p. 10 of [24] and in sub-section 8.1.2 of this paper. The purpose of these “quiet” regions, within which the move limits of the decision variables are severely restricted, is to close in on a possibly better optimum design in the neighborhood of the “best” design determined previous to that iteration at which the “quiet” region begins. At the end of each “quiet” region the move limits of the decision variables are re-expanded to their values used during the “non-quiet” design iterations, that is, during most of the **SUPEROPT** process, during which in this example the objective is rather “jumpy” from design iteration to iteration. The starting design before the first SUPEROPT is listed in Table 35.