
HUGO RODRIGUEZ ORDONEZ, University of Regina, Regina, SK S4S 4P7

A counterexample to Ganea's conjecture with minimum dimension

In 1967, T. Ganea conjectured that for any finite CW -complex and $r \geq 1$ it ought to hold that $\text{cat}(X \times S^r) = \text{cat } X + 1$, where cat is the Lusternik–Schnirelmann category. This conjecture has been readily disproved by N. Iwase. A 7-dimensional CW -complex X such that for sufficiently large r , $\text{cat}(X \times S^r) = \text{cat } X = 2$ is constructed. Such space X is then proved to be a minimum dimensional counterexample to Ganea's conjecture.