On the Uniqueness of Topological Degrees for Densely Defined Operators of Type \((S_+)\)

Let \(X\) be a separable reflexive Banach space, \(G\) a bounded open subset of \(X\), and \(L\) a dense linear subspace of \(X\). The uniqueness of the topological degree, \(d(A, G, 0)\), for mappings \(A : X \supset D(A) \to X^*\) satisfying Condition \((S_+)\) invariant under certain homotopy is established. The existence of such a topological degree is first established by Kartsatos and Skrypnik, and later, by Berkovits by using a different approach.