A NEW NORM DERIVATIVES ORTHOGONALITY RELATION IN NORMED SPACES

ABSTRACT. In this talk, we review some recent results on the orthogonality relations in normed linear spaces related to norm derivatives. As the main aim, we introduce a generalized orthogonality relation in real normed linear spaces via norm derivatives. The relation of this concept and other types of orthogonalities such as Birkhoff–James orthothogonality and orgonality relations connected with norm derivatives is investigated. Some new characterizations of smooth normed spaces are provided. Furthermore, some results concerning the linear mappings which exactly (approximately) preserve this new type orthogonality relation are presented.