ABSTRACT

By analyzing the Quark mixing and the Lepton mixing one can find an empirical relation that exists between the solar mixing angle (s) and the Cabibbo angle (c), which is s + c =4, called Quark-Lepton complementarity (QLC). QLC suggests a possible existence of Quark-Lepton unification. In literature, it has already been shown that such an empirical relation can be obtained from the Grand unified theories. We discuss an alternative approach in which such a relation emerges only from the group theoretical consideration of the lepton mixing. We assume that the lepton mix- ing are dominantly given by Bi-maximal mixing and then the corrections from the charged leptons will generate a QLC like relation. Such corrections are also assumed to be fixed by group theoretical constraints. After scanning several discrete subgroups of SU(3) (of order < 2000) we find that the corrections from the charged leptons sector must be in terms of more than one angle to get a viable PMNS matrix. As one of the consequences of the exercise, we find that pmns 23 > =4, which can be confirmed or ruled out from the currently ongoing experiments.