Irreducible maximal subgroups of classical algebraic
groups
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We consider triples \((H, G, V)\), where \(G\) is a simple algebraic group defined over an algebraically closed field \(k\), with closed positive-dimensional subgroup \(H\), and \(V\) is a \(kG\)-module on which \(H\) acts irreducibly. All such triples where \(H\) is connected were determined by Dynkin (in the case of zero characteristic) and by Seitz and Testerman (in positive characteristic). The triples where \(G\) is exceptional and \(H\) is disconnected were determined by Ghandour. Certain configurations with \(G\) classical and \(H\) disconnected were studied by Ford. We will discuss our work on the case where \(G\) is classical and \(H\) is disconnected and maximal among closed subgroups of \(G\).