Mathematics Paper1 November 2012 Memo

When Albert and his buddies have a "no girls" baseball game, Frances and her sister organize a "Best Friends Outing -- No Boys."
MBA????
?????,??
????????????????????????????????????,????????????????????????????????????,?????????
??????????????
????????????????????? ????????????????TOP1 ?????????????? ???????????????? ????????????????
???????????28??9?????????
????????????????????4?????10??——??
??? ??
????????????????????????????????????? ????????????????????????????????????? ??
??
Let be a simple classical algebraic group over an algebraically closed field of characteristic with natural module . Let be a closed subgroup of and let be a nontrivial -restricted irreducible tensor indecomposable rational -module such that the restriction of to is irreducible. In this paper the authors classify the triples of this form, where and is a disconnected almost simple positive-dimensional closed subgroup of acting irreducibly on . Moreover, by combining this result with earlier work, they complete the classification of the irreducible triples where is a simple algebraic group over , and is a maximal closed subgroup of positive dimension.
??????,?????,????:???????????,??????????,?????????,?????????,???????,????????,?????????,??????,?????????,????
???,????.
?????-????2020-2029??????(????????)????????????????????????????,????????????????????,????????????????????????
???????????
????????????????????????????,????????????????????????????,??“??”????????????????????
????????·????????????????,?????????????????????.????,???????????,??????????????,???????????????,????????????,????????????.
??????:??
Motivated by the maximal subgroup problem of the finite classical groups the authors begin the classification of imprimitive irreducible modules of finite quasisimple groups over algebraically closed fields K. A module of a group G over K is imprimitive, if it is induced from a module of a proper subgroup of G. The authors obtain their strongest results when char(K)=0, although much of their analysis carries over into positive characteristic. If G is a finite quasisimple group of Lie type, they prove that an imprimitive irreducible KG-module is Harish-

Chandra induced. This being true for \rm char(K) different from the defining characteristic of G, the authors specialize to the case char(K)=0 and apply Harish-Chandra philosophy to classify irreducible Harish-Chandra induced modules in terms of Harish-Chandra series, as well as in terms of Lusztig series. The authors determine the asymptotic proportion of the irreducible imprimitive KG-modules, when G runs through a series groups of fixed (twisted) Lie type. One of the surprising outcomes of their investigations is the fact that these proportions tend to 1, if the Lie rank of the groups tends to infinity. For exceptional groups G of Lie type of small rank, and for sporadic groups G, the authors determine all irreducible imprimitive KG-modules for arbitrary characteristic of K.

????:??·???

????????,??

?????

????????????????,?????????????

???·????(Philip Kotler),????????????????,?????????????????????

????5?,????:"??""???????""?????????????????""????????????"?,????????????????.

??