HIBI RINGS AND RANK BOUNDED HIBI SUBRINGS

NADIA SHOUKAT

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ABDUS SALAM SCHOOL OF MATHEMATICAL SCIENCES

Let L be a distributive lattice and R[L] the associated Hibi ring. We show that if L is planar, then any bounded Hibi subring of R[L] has a quadratic Gr¨obner basis. We characterize all planar distributive lattices L for which any proper rank bounded Hibi subring of R[L] has a linear resolution. Moreover, if R[L] is linearly related for a lattice L, we find all the rank bounded Hibi subrings of R[L] which are linearly related too.

NATIONAL CENTER FOR MATHEMATICS &
ABDUS SALAM SCHOOL OF MATHEMATICAL SCIENCES
GC UNIVERSITY, LAHORE