Matrices in modular lattices

BENEDEK SKUBLICS
Bolyai Institute, University of SZEGED
bskublics@math.u-szeged.hu

Let $(a_1, \dots, a_m, c_{12}, \dots, c_{1m})$ be a spanning von Neumann m-frame of a modular lattice L, and let $(u_1, \dots, u_n, v_{12}, \dots, v_{1n})$ be a spanning von Neumann n-frame of the interval $[0, a_1]$. Assume that either $m \geq 4$, or L is Arguesian and $m \geq 3$. Let R^* denote the coordinate ring of $(a_1, \dots, a_m, c_{12}, \dots, c_{1m})$. If $n \geq 2$, then there is a ring S^* such that R^* is isomorphic to the ring of all $n \times n$ matrices over S^*. If $n \geq 4$ or L is Arguesian and $n \geq 3$, then we can choose S^* as the coordinate ring of $(u_1, \dots, u_n, v_{12}, \dots, v_{1n})$.

The proof uses product frames which were defined by Czedli [1]. The talk is based on [2].

REFERENCES

[1] G. Czédli: The product of von Neumann n-frames, its characteristic, and modular fractal lattices, Algebra Universalis 60 (2009), 217-230.

[2] G. Czédli and B. Skublics: The ring of an outer von Neumann frame in modular lattices, Algebra Universalis, submitted.