► JOANNA JURECZKO, *New results on partitioner-representable algebras.*
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In 1982 Baumgartner and Weese introduced the natural notion of partitioners.

Remind that if $F$ is a mad family, then a set $a \subseteq \omega$ is called a *paritioner* of $F$ iff for all $b \in F$ either $b - a$ or $b \cap a$ is finite. Then, if $\mathbb{B}$ is a Boolean algebra and $I$ is an ideal in $\mathbb{B}$ generated by $F$ and finite sets, the algebra $\mathbb{B}/I$ is called the *partition algebra* of $F$. If a Boolean algebra is isomorphic to the partition algebra of some mad family, then such an algebra is called to be *representable.*

In [1] the authors proved several important theorems in this subject, among others they showed that under (CH) each Boolean algebra of cardinality $\leqslant \mathfrak{c}$ is representable. They also show that there are algebras which are non-representable in some models.

The authors in [1] also posed a number of problems which were solved later, (see [3]). We will show the solution of Problem 3: Must every representable algebra be embeddable in $P(\omega)/fin$ ? Among others we will show that there are some models in which $P(\omega_1)$ is embeddable in $P(\omega)/fin$ but not representable, and conversely. The most our unexpected result is that there is a model in which $P(\omega)/fin$ is not representable. During the talk we also present some related results.
This is the joint work with Ryszard Frankiewicz.

[1] Baumgartner J.E. and Weese M., *Partition algebras for almost-disjoint families*, ***Transactions of American Mathematical Society***, vol. 274 (1982), no. 2, pp. 619-630.

[2] Frankiewicz R., *Some remarks on embeddings of Boolean algebras and topological spaces, II*, ***Fundamenta Mathematicae***, vol. 126 (1985), no. 1, pp. 63–68.

[3] Frankiewicz R. and Zbierski P., ***Hausdorff gaps and limits***. Studies in Logic and the Foundations of Mathematics, vol. 132, North-Holland, 1984.