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POLARISED PARTITION RELATIONS FOR ORDER TYPES

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Many partition relations have been proved assuming the Generalised Continuum Hypothesis. More precisely, many negative partition relations involving ordinals smaller than ω_2 have been proved assuming the Continuum Hypothesis. Some recent results in this vein for polarised partition relations came from Garti and Shelah. The talk will focus on ordinary partition relations. The negative relations $\omega_1\omega \not\to (\omega_1\omega, 3)^2$ and $\omega_1^2 \not\to (\omega_1\omega, 4)^2$ were both shown to follow from the Continuum Hypothesis, the former in 1971 by Erdős and Hajnal and the latter in 1987 by Baumgartner and Hajnal. The former relation was shown to follow from both the dominating number and the stick number being $\aleph_1$ in 1987 by Takahashi. In 1998 Jean Larson showed that simply the dominating number being $\aleph_1$ suffices for this. It turns out that the unbounding number and the stick number both being $\aleph_1$ yields the same result. Moreover, also the second relation follows both from the dominating number being $\aleph_1$ and from both the unbounding number and the stick number being $\aleph_1$ thus answering a question of Jean Larson.

This is joint work with Chris Lambie-Hanson and both Shimon Garti and William Chen, the paper and the preprint are available at

`https://projecteuclid.org/euclid.jmsj/1542704621`,

`http://www.logic.univie.ac.at/~weinertt92/stick.pdf`,

respectively.

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