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Inherited unitals in Moulton planes*

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Abstract: We prove that every Moulton plane of odd order—by duality every generalised André plane—contains a unital. We conjecture that such unitals are non-classical, that is, they are not isomorphic, as designs, to the Hermitian unital. We prove our conjecture for Moulton planes which differ from $\mathrm{PG}(2, q^2)$ by a relatively small number of point-line incidences. Up to duality, our results extend previous analogous results—due to Barwick and Grüning—concerning inherited unitals in Hall planes.

Keywords: Unitals, Moulton planes.

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Podedovani unitali v Moultonovih ravninah*

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Povzetek: Dokažemo, da je vsaka Moultonova ravnina lihega reda—do dualnosti vsaka posplošena Andréjeva ravnina—vsebuje unital. Domnevamo, da takšni unitali niso klasični, tj. kot načrti niso izomorfni hermitskemu unitalu. Dokažemo našo domnevo za Moultonove ravnine, ki se razlikujejo od $\mathrm{PG}(2, q^2)$ za relativno majhno število incidenc točk in premic. Naši rezultati, do dualnosti natančno, razširjajo prejšnje analogne rezultate Barwicka and Grüninga o podedovanih unitalih v Hallovih ravninah.

Ključne besede: Unitali, Moultonove ravnine.

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