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## On $t$ -fold covers of coherent configurations

Alyssa D. Sankey\*

*Department of Mathematics & Statistics, University of New Brunswick,  
P.O. Box 4400, Fredericton, N.B., E3B 5A3, Canada*

**Abstract:** We introduce the covering configuration induced by a regular weight defined on a coherent configuration. This construction generalizes the well-known equivalence of regular two-graphs and antipodal double covers of complete graphs. It also recovers, as special cases, the rank 6 association schemes connected with regular 3-graphs, and certain extended  $Q$ -bipartite doubles of cometric association schemes. We articulate sufficient conditions on the parameters of a coherent configuration for it to arise as a covering configuration.

**Keywords:** Association scheme, coherent configuration, regular weight, double cover, two-graph,  $t$ -graph.

Math. Subj. Class.: 05C22, 05C50, 05E30

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\* *E-mail address:* [asankey@unb.ca](mailto:asankey@unb.ca) (Alyssa D. Sankey).

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## O $t$ -kratnih krovih koherentnih konfiguracij

Alyssa D. Sankey\*

*Department of Mathematics & Statistics, University of New Brunswick,  
P.O. Box 4400, Fredericton, N.B., E3B 5A3, Canada*

**Povzetek:** Vpeljemo krovno konfiguracijo, inducirano z regularno utežjo, definirano na koherentni konfiguraciji. Ta konstrukcija posploši dobro znano ekvivalenco med regularnimi 2-grafi in antipodnimi dvojnimi krovni polnih grafov. Prav tako nam ponovno generira, kot posebne primere, asociativne sheme ranga 6, povezane z regularnimi 3-grafi, in določene razširjene  $Q$ -dvodelne dvojnike kometričnih asociativnih shem. Podamo zadostne pogoje za parametre koherentne konfiguracije, da jo lahko dobimo kot krovno konfiguracijo.

**Ključne besede:** Asociativne sheme, koherentne konfiguracije, regularna utež, dvojni krov, 2-grafi,  $t$ -graf.

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\* *e-poštni naslov:* [asankey@unb.ca](mailto:asankey@unb.ca) (Alyssa D. Sankey).