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Title: Polynomial hypergroup structures and applications to probability theory

Author(s): Walter R. Bloom and Herbert Heyer

A new trend in enlarging the repertoire of concrete hypergroups is the construction of polynomial hypergroup structures on higher-dimensional Euclidean spaces. It turns out that stochastic processes taking values in such structures and their duals reveal surprising phenomena. In the present exposition recent progress in the theory achieved by Koornwinder, Connett and Schwartz, and by the Tunisian School will be discussed and made accessible also to the non-specialized reader.

Address:

Walter R. Bloom

School of Chemical and Mathematical Sciences

Murdoch University

Murdoch (Perth) WA 6150

Australia

E-mail: w.bloom@murdoch.edu.au

Address:

Herbert Heyer

Mathematisches Institut

Eberhard-Karls-Universität Tübingen

D-72076 Tübingen

Germany

E-mail: herbert.heyer@uni-tuebingen.de