

2022 Hall Medal awarded to Jan De Beule

Jan De Beule obtained a PhD in Mathematics at Ghent University, Belgium in 2004. He had positions as postdoctoral researcher at Ghent University, at the Research Foundation Flanders -- Belgium, and at the Vrije Universiteit Brussel (VUB), Belgium. Since 2020, he is a professor at the Vrije Universiteit Brussel (VUB), Belgium. His research field concerns finite projective spaces, their substructures, their applications in coding theory, and computer algebra.

He is a co-author of over 40 publications in international mathematics journals, one chapter in a book, 3 conference proceedings and was co-editor for 3 edited works. He is co-editor of the book: *Current research topics in Galois geometry* (NOVA Sci. Publ.), which was specifically written to stimulate research on Galois Geometry. The topics on which he has contributed vary from blocking sets in finite projective spaces and in finite classical polar spaces, partial ovoids and partial spreads in finite classical polar spaces, Cameron-Liebler sets in finite projective spaces, minihypers in finite projective spaces and linear codes meeting the Griesmer bound, to arcs and linear MDS codes, and degree 2 Boolean functions on Grassmann graphs. His most important results include: (1) the non-existence of maximal partial ovoids of size $q^2 - 1$ in the generalized quadrangle $Q(4, q)$, $q = p^h$, p an odd prime, $h > 1$, (2) the determination of the size of the largest partial spreads in the Hermitian variety $H(5, q^2)$, (3) his work on the MDS conjecture with S. Ball and on other related problems on linear MDS codes, and (4) a new infinite family of Cameron-Liebler line classes in $PG(3, q)$, $q \equiv 5 \pmod{12}$ or $q \equiv 9 \pmod{12}$, with parameter $x = (q^2 - 1)$. The methods he applied to obtain these results include geometrical and polynomial techniques.