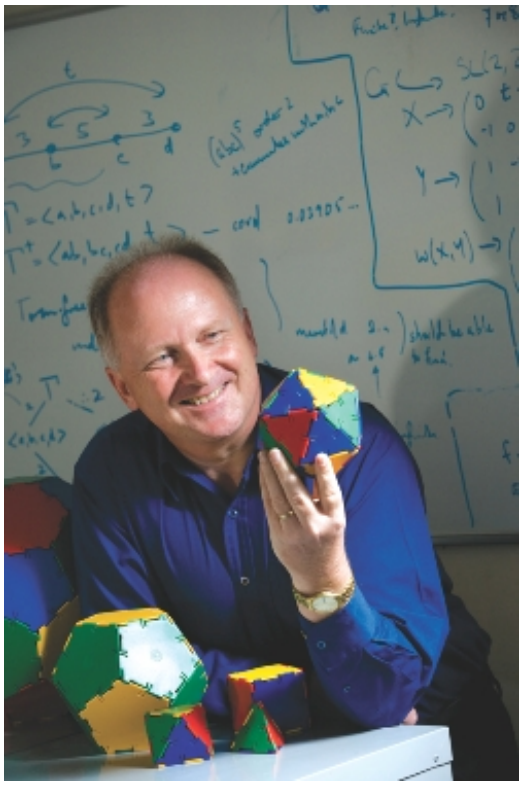
The Mathematics Department of the Université libre de Bruxelles is proud to announce that

Marston Conder

will give a talk on Monday 6th of July at 3pm, Forum A, Campus de la Plaine, Université libre de Bruxelles, entitled

The ubiquity of alternating groups (as automorphism groups of symmetric structures)



There are several contexts in which finite alternating groups occur as the automorphism group (or orientation-preserving automorphism group) of a discrete structure with maximum possible symmetry under certain constraints. In fact, it frequently happens that all but finitely many A_n appear in the given context, and sometimes all but finitely many symmetric groups S_n occur as well (or instead).

Examples include *Hurwitz surfaces* (compact Riemann surfaces of genus $g > 1$ with $84(g-1)$ conformal automorphisms), or equivalently, *regular maps* of type $\{3, 7\}$, and also 5-*arc-transitive cubic graphs*, 7-*arc-transitive* 4-*valent graphs*, and *hyperbolic* 3-*manifolds of largest possible symmetry-to-volume ratio*.

I will explain some of these, as well as a recent one (*locally 9-arc-transitive bipartite graphs*), and the possibility that for every $r \geq 3$, all but finitely many A_n and S_n occur as the automorphism group of a *chiral polytope* of rank r.

Marston D. E. Conder is a Distinguished Professor of the University of Auckland, New Zealand. He is one of the leading mathematicians in his fields of research which include Combinatorial Group Theory and Graph Theory. He obtained his PhD thesis in Oxford in 1980 under the supervision of Graham Higman. He became a Fellow of the American Mathematical Society in 2012.