

PhD research topic proposal
BME, Doctoral School of Mathematics and Computer Science

Name and degree of supervisor :

Hegedüs Pál, PhD

Are you willing to supervise Stipendium Hungaricum applicants?

Yes.

Title of the topic:

Reflection subgroups of finite and affine Weyl groups

Short description:

The theory of finite groups generated by reflections in the real n -dimensional space is a 150 years old rich area. Among these the building blocks are the Weyl groups. All reflection subgroups of these have recently been described in full. We are interested in the properties of the (infinite) permutation actions on the cosets of these subgroups.

Recently, we described a general permutation action for the affine Weyl groups of type B and C where the stabiliser was a Gelfand subgroup, that is, the permutation module was multiplicity-free. This was then generalised to all affine Weyl groups. These naturally defined stabilisers are reflection subgroups. There remains to decide for which reflection subgroups in general does the Gelfand property hold?

Requirements:

Strong background in group theory is a must. Algorithmic, computational and general algebraic background are welcome.

Contact:

E-mail:

hegpal@math.bme.hu

Place of work:

BME, Building H, Office 505