Seminarium geometrów

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Combinatorial modulus on boundaries of some right-angled hyperbolic buildings

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Abstract: It is known since G.D. Mostow that the quasi-conformal structure of the boundary of a hyperbolic space can be used to obtain rigidity results. In the case of right-angled buildings of dimension 2, the Loewner property is a key tool to prove the rigidity of quasi-isometries. Hence a natural question to ask is: do some boundaries of buildings of dimension 3 carry the Loewner property?

The combinatorial Loewner property is a discrete version of the Loewner property that is conjecturally equivalent to it. Yet this second property seems easier to find on the boundary of a hyperbolic group as it does not require the knowledge of the conformal dimension.

In my talk I will investigate the quasi-conformal structure of some right-angled hyperbolic buildings of dimension 3 thanks to combinatorial tools. As a result I will present some buildings whose boundaries satisfy the combinatorial Loewner property.