CCSU

DEPARTMENT OF MATHEMATICAL SCIENCES

VIRTUAL COLLOQUIUM

Friday, December 4

3:00 – 4:00 PM

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THE BUSEMANN CONJECTURE AND RELATED CONJECTURES

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Abstract: Seventy-eight years ago, Herbert Busemann introduced the notion of a geodesic space, called G-space, in an attempt to give an axiomatic study of geometry on manifolds. In his 1955's book, *The Geometry of Geodesics*, Busemann himself verified that G-spaces of dimensions 1 and 2 are topological manifolds. Meanwhile, he conjectured that this is true for all dimensions as well. The cases of dimensions 3 and 4 were confirmed by Krakus and Thurston, respectively. For the higher dimensional Busemann conjecture, very little progress has been made for 65 years. One of the fascinating things about the Busemann conjecture is its relationship to the other famous open problems: the Bing-Borsuk conjecture, R. L. Moore's conjecture, the de Groot conjecture, etc. In this talk, I will introduce G-spaces and go through some of the major conjectures related to the Busemann conjecture. At the end of the talk, I will give a solution to the finite-dimensional Busemann conjecture.

For further information:

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