

Commutative Rings Graded by Abelian Groups

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Location: AB7 220

Monday, February 20, 3:30 pm-4:30 pm

Abstract:

A commutative ring is graded by an abelian group if the ring has a direct sum decomposition (by subgroups of the ring) indexed over the group, with the additional condition that the multiplication in the ring is compatible with the group operation. One fundamental notion in the study of graded rings is that if we understand the homogeneous pieces (the elements of the direct sum), we can understand the underlying ring. We will look at a basic introduction to the theory of graded rings, some similarities and differences between the graded and non-graded case, as well as the progress I have made in understanding the underlying ring by studying only homogeneous properties.