IMAR Monthly Lecture
Lucian Bădescu Prize Lecture
Sheaf cohomology on flag varieties
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Abstract A fundamental problem at the confluence of algebraic geometry, commutative algebra and representation theory is to understand the structure and vanishing behavior of the cohomology of line bundles on flag varieties. Over fields of characteristic zero, this is the content of the Borel-Weil-Bott theorem and is well-understood, but in positive characteristic it remains wide open, despite important progress over the years. In my talk I will discuss recent progress on this problem and illustrate some of the difficulties that occur when passing from characteristic zero to positive characteristic.