

**UBC Seminar of algebraic groups, Galois
cohomology and related topics
Friday, April 3, 10-10:50am, Math Annex 1118.**

Speaker: Qëndrim R. Gashi (Max Plank Institute)

Title: A converse to Mazur's Inequality

Abstract: Given an isocrystal N and a lattice M in it, Mazur proved that the Hodge vector of M lies on or above the Newton vector of N . This can be viewed as a statement for the group GL_n and it is known that it can be generalized to other reductive groups. The converse to Mazur's inequality is the assertion that given a vector ν that lies above the Newton vector of N (and satisfies certain obvious properties), there exists a lattice M whose Hodge vector is equal to ν . We prove the generalized converse to Mazur's inequality for (connected, reductive) split and quasi-split groups; this was previously known for split classical groups. These results can also be interpreted to give a necessary and sufficient condition for the non-emptiness of certain affine Deligne-Lusztig varieties.