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*Affine Grassmannians over  $p$ -adics and double affine Hecke algebras*

If  $K$  is a non-Archimedean local field and  $G$  a split simple algebraic group, the group of  $K((t))$ -points of  $G$  is not locally compact. Nevertheless, one can make sense of the Hecke algebra of this group by an appropriate Iwahori-type subgroup, by using certain function spaces on the set of  $K$ -points of the affine Grassmannian of  $G$ . This algebra can be identified with a version of Cherednik's double affine Hecke algebra.