Multidimensional Adeles

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The concept of adeles plays a central role in modern number theory. Not just the arithmetic case, also curves can be treated from an adelic perspective. It is natural to ask whether the geometry of surfaces, 3-folds etc. can also be studied with adelic tools (and with a lot of optimism one can hope that with a suitable notion of infinite place such a theory can even treat arithmetic schemes - this is totally open). In the geometric case, Parshin gave a definition of adeles for surfaces, Beilinson for all dimensions. More recently, Fesenko and others have begun to develop harmonic analysis for higher adeles with Tate's Thesis in mind. The talk gives an introduction to the circle of ideas of multidimensional adeles.