

## **Katarzyna Kuhlmann**

University of Katowice, Poland

*Brown's speculation about spaces of  $R$ -places of function fields over  
non-archimedean real closed fields*

It is well known that the space of all  $\mathbb{R}$ -places of a rational function field  $R(X)$  over an archimedean real closed field  $R$  is homeomorphic to the circle. Manfred Knebusch proved in 1976 that the space of  $\mathbb{R}$ -places of a finite extension of  $R(X)$  is homeomorphic to a finite disjoint union of circles, and Ron Brown generalized this in 1980 to the case of any archimedean ordered field  $R$ . In the same paper he suggested that an analogue holds in the non-archimedean case, namely, that the space of  $\mathbb{R}$ -places of a finite extension is a finite disjoint union of copies of the space of  $\mathbb{R}$ -places of the rational function field. We have recently determined the structure of the latter. But an example that we will discuss appears to show that Brown's suggestion fails; details have yet to be worked out.