Title: On Arf rings

In 1971, Lipman proved that, if \((R, m)\) is a complete, one-dimensional local domain with an algebraically closed field of characteristic zero, and \(R\) is saturated, then \(R\) has minimal multiplicity, that is, the embedding dimension of \(R\) is equal to the multiplicity of \(R\). In the proof, Lipman used the fact that such a ring \(R\) is an Arf ring, i.e., \(R\) satisfies a certain condition that was studied by Arf in 1949 pertaining to a certain classification of curve singularities. The defining condition of an Arf ring is easy to state: if \(R\) is as above, then \(R\) is Arf provided, whenever \(0 \neq x \in m\) and \(y/x, z/x \in \text{Frac}(R)\) are integral over \(R\), one has that \(yz/x \in R\).

In this talk we discuss some characterizations and examples of Arf rings, as well as a definition for higher dimensional Arf rings which has been recently proposed to us by Cătălin Ciupercă. (Received July 12, 2019)