

Karl Schwede: **On the moduli part of the F-different**

Suppose X is a variety with a Frobenius splitting, compatibly splitting a subvariety W .
How can we describe the induced splitting on W (as a divisor)?
What is the induced splitting on W as the characteristic varies?

These questions are closely tied to questions in birational algebraic geometry.
Indeed, given a log canonical center W of some log canonical pair (X, D) , one expects/obtains a divisor D_W on W such that $K_W + D_W$ is linearly equivalent to the restriction of $K_X + D$ to W .
This divisor D_W has two parts, the "fixed" divisorial part and the moduli part which is not fixed.
From the point of view of F-singularities, the moduli part appears to be fixed too -- this just corresponds to the induced splitting on W .
We will explore the meaning of this fixed D_W both in terms of a fibration coming from a resolution of X and as we vary the characteristic.

This is work in progress with Omprakash Das.