

**Meeting:** 1003, Atlanta, Georgia, SS 20A, AMS Special Session on Commutative Algebra, I

1003-13-1035      **Kazuma Shimomoto\*** ([shimomot@math.utah.edu](mailto:shimomot@math.utah.edu)), University of Utah, Department of Mathematics, 155 S. 1400 E. Rm 233, Salt Lake City, UT 84112. *The Frobenius map in mixed characteristic.*

One of the major progress in local algebra in recent years is Heitmann's proof of direct summand conjecture in dimension 3. He also shows that it suffices to prove "almost vanishing" of local cohomology modules for various kinds of homological conjectures. In this talk, I will talk about Frobenius action in mixed characteristic and mention that the almost vanishing is equivalent to showing the vanishing of length function of local cohomology modules, whose main idea was introduced by G.Faltings. (Received October 03, 2004)