1142-13-86 **Alessandra Costantini*** (costanta@purdue.edu) and **Tan Dang**. *On the Cohen-Macaulay property of the Rees algebra of the module of differentials.* Preliminary report.

Let R be a Noetherian ring, E a finite R-module having a rank e (i.e. E is free of rank e locally at every associated prime). We say that E satisfies condition F_t if the minimal number of generators of $E_{\mathfrak{p}}$ is at most $\dim R_{\mathfrak{p}} + e - t$ for every prime ideal $\mathfrak{p}$ such that $E_{\mathfrak{p}}$ is not free.

It is known by work of Avramov, Huneke, and Simis and Vasconcelos that if E has projective dimension one and satisfies F_1, then the Rees algebra of E is Cohen-Macaulay. While the converse does not hold in general, Simis, Ulrich and Vasconcelos proved it holds in the case when E is the module of differentials of a complete intersection over a field of characteristic zero, satisfying F_0. It is an open question whether the assumption that E is F_0 can be removed. In this talk I will describe how to reduce the problem to a linear algebra question about the presentation matrix of E. This is a joint work in progress with Tan Dang. (Received August 29, 2018)