

## ADMINISTRATIVE REPORT OF SNIGDHAYAN MAHANTA

There is an *Indo-French* virtual school of mathematics, which encourages mathematical interaction between *India* and *France*. Such interactions help in bringing the two cultures close to each other, as well. The exchange programme between *CMI* and *ENS* is a part of this endeavour. Under this exchange programme, three students from *CMI* visited *ENS* this summer (*May 2, 2003 to June 27, 2003*) and I happened to be one of them (others were - Sourav Chakraborty and T. Saravanan). My friend *T. Saravanan* will stay beyond *June 27*, as he will take part in the *Sélection Internationale* of *ENS*.

In the spring semester of 2003, *Olivier Wittenberg* was one of the *Normaliens*, who visited *CMI*. There he offered a course on algebraic geometry, which introduced me to the subject and also aroused interest in me to delve deep into it. Professor *Jean-Louis Colliot-Thélène* from the *University of Paris-Sud (XI)* at *Orsay* very kindly agreed to be my advisor during my stay. Incidentally, he is the thesis advisor of *Olivier Wittenberg*. He offered me the interesting project of studying a paper by Professor *D. F. Coray* entitled *Algebraic Points on Cubic Hypersurfaces*, which appeared in the journal *Acta Arithmetica* volume 30, 1976. I gave a talk on my work at *14H30* on *June 19* at *Salle W, ENS*. The details of my work can be found in my academic report. The ideas used in the proof could possibly be applied elsewhere with success and that is what I intend to focus on now. Apart from that, I attended several talks and “exposés”, most of them in French. I present a brief list below:

1. Séminaire Boubaki at the Institut Henri Poincaré (June 21 - 22)
2. Séminaire d'Arithmétique et Géométrie Algébrique (SAGA) at Orsay. (it takes place on tuesdays at 16H).
3. Soutenance de thèse of Dr. Stéphane Fischler on June 6, at Chevaleret (Paris 13ème)
4. Exposé de maîtrise of Yashonidhi Pandey and Piotr Karwasz (partners) and Katharina Pabst and Chloé Perin (partners) on June 23 and 24 respectively at ENS.
5. Lecture of Jean Benoît Bost on Formes différentielles et variétés at ENS.
6. Talks of Sourav Chakraborty and T. Saravanan on June 18 and 25 respectively.

Ample library facilities were available to me, both at *ENS* and at *Orsay*. I was given office space in *T6* along with my friend *T. Saravanan*. I was provided with my own computer in my office and also stationery materials were available plentifully. We had logins in both the *DMA* and the students' server. In short, we were provided with all possible facilities conducive to studies.

We flew from *Chennai* to *Paris* in *Sri Lankan Airlines* and our flying expenses were borne by *CMI*. Our accommodation was arranged at *Montrouge* in the *7th floor* of the towers B and C. (The rooms in the 7th floor are supposed to be better). We were served bread, orange juice, milk, butter, chocolate powder and coffee on

week days as breakfast. *DMA* also gave us “*Pot*” tickets (the canteen is called *Pot*), which were sufficient for our stay. On May 5, two days after reaching *Paris*, we got our staying allowance of 895 euros, each. (That is because we reached late on a Friday and the next Saturday and Sunday were holidays). There was also a book grant of 900 euros earmarked for the 3 of us put together, with which we bought several books. There was a special “*Thé*” (Tea) organized to celebrate our arrival, where we were gifted with some souvenirs. We were always invited to all the festivities of the *DMA*, for example the weekly tea on Wednesdays at 16H, the party hosted by *Dr. Stéphane Fischler* at the end of his “*Soutenance de thèse*” and the special end of the academic year celebration at *ENS*.

We had lofty plans of visiting *Spain* and *Italy*, but the strikes in *Paris* and later on our own engagements with our works forced us to decide against it. I used to spend my week-ends visiting the museums and other tourist places in *Paris*. I have only one adjective for *Paris* - picturesque. Almost every nook and corner of *Paris* is beautiful. The sights coupled with the pleasant weather made our visit extremely enjoyable from the touristic point of view. Moreover, on numerous occasions we were invited to lunch or dinner and the hosts were *Dr. Stéphane Fischler, Xavier Rival, Ramona Anton, Nicolae Mihalache-Ciurdea, Augustin Chaintreau, Yashonidhi Pandey, Anne Bouillard* and *Professor Michel Waldschmidt*. We also got introduced to *Professor S. G. Dani* and *Professor Riddhi Shah* in the lunch hosted by *Professor Waldschmidt* and to *Professor Chandrashekhar Khare* in Séminaire Bourbaki.

I am extremely thankful to *Dr. Stéphane Fischler* for organizing everything with clinical precision. I would like to thank *Xavier Rival, Ramona Anton and Nicolae Mihalache-Ciurdea* for helping us in getting used to the place and the environment. I would like to thank my advisor *Professor Colliot-Thélène*, too, for being so nice to me and making my stay an academically productive one. I should thank *Mme Laurence Vincent* and *Ms. Lara Morise* for their co-operation and for putting up with my French. (I intend to learn French properly and surprise them with my fluency, the next time we meet). Finally, I would like to thank *CMI* for selecting me to visit this place. To sum up, I thank everyone associated with the exchange programme for making me feel so special for two months.

**July 27, 2003**