

Report of ENS visit: May-July 2003

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As part of the ENS-CMI exchange programme, I visited École Normale Supérieure (Paris) from the 2nd of May to the 20th of July in the year 2003. Along with me were two of my batchmates Sourav Chakraborty and Snigdhasayan Mahanta. The stay lasted for around 11 weeks and it was a very fruitful period, academically and non-academically.

Work My work was to study the paper of A.A.Beilinson on the derived category of coherent sheaves on projective spaces. My guide was Dr. Serguei Barannikov of ENS. He gave me the topic earlier when I was in India so that I could read some preliminary stuff. I read cohomology of projective spaces and about derived and triangulated categories in India and during the initial part of my stay in ENS. Then I started reading the paper. The paper doesn't have elaborate proofs. So, as we read the paper we gave more detailed proofs. In the end of June I gave a lecture to DMA titled "Derived categories of coherent sheaves on projective spaces". The work has been better understood now using quivers and I will continue studying in this direction.

During my stay in Paris I attended some lectures and seminars which were going on in Paris at that time. I attended the course for the first year students of ENS in Differential Geometry and a lecture in Complex Analysis. We could not attend many of the first year courses since it was already the end of the semester when we came to ENS. I also attended a lecture at Université Paris-Sud XI, Orsay in SAGA by N.Kim on "Belyi maps for elliptic curves" and lectures at the "Séminaire N. Bourbaki".

Other Aspects The airfare was paid by Chennai Mathematical Institute, Chennai and our stay in Paris was hosted by ENS. On arriving to Paris I was given a sum of 895 euros for my expenses during the first two months. I got another 200 Euros for my stay during July. Apart from this we were given a book grant of 300 euros each. I was also given a total of 76 coupons for the ENS canteen (pot) which was enough for the stay. During the first two months we stayed at the ENS guest house at Montrouge. There were facilities to cook. During July I stayed at the ENS students hostel in rue d'Ulm. I was writing the Sélection Internationale and staying there I could interact with the other participating students. My friend Snigdhasayan Mahanta and I shared an office(T6) in the fourth floor of the ENS building. It was a very nice room. We were very happy with the facilities provided.

Conclusion Overall, the stay in Paris was a very pleasant one. I also visited many places in Paris and it was a wonderful experience. I'm thankful to my guide Dr. Serguei Barannikov for introducing me to the subject and for helping me in reading the paper. Special thanks

to Dr. Stéphane Fischler for helping us a lot during the stay. I would also like to thank the non-academic staff, the students of ENS, other participants in the exchange programme and my friends in ENS for their hospitality. I would like to thank the DMA for extending my invitation till the 20th of July so that I could sit for the Sèlection Internationale. Finally I thank my institute CMI for giving me the oppurtunity to take part in this exchange programme.

(Saravanan Thiyagarajan)