

**Max – Planck – Institute for Plasma Physics**  
**Summer University for Plasma Physics and Fusion Research 2015**  
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In the third week of September 2015, thanks to FuseNet, I had the chance to have a taste of an amazing field of research: nuclear fusion! An aerospace engineer and a future space systems engineer, I was always driven by curiosity and the desire of knowledge. Although my main interest is towards plasma physics and its application on space electric propulsion – plasma thrusters – the field of nuclear fusion got my interest as well, defining the fascinating attempt of mankind to create a “star” on Earth and produce enough energy to sustain the future growth in energy consumption of our society.

During a week of intensive courses on plasma physics and fusion research, starting with the basic principles that define both research fields and continuing with more advanced concepts as wave and neutral beam heating, plasma – wall interaction, inertial fusion and astrophysical plasmas, the IPP Summer University offered an almost exhaustive approach to the fusion research principles and succeeded to deepen my knowledge and open the window to new horizons in my future educational and research work. Another important part of the Summer University was the presentation of the basic working principles of the tokamak and stellarator fusion devices together with a review of the most important experimental results obtained using ASDEX Upgrade (the Max – Planck – Institute for Plasma Physics tokamak in Garching) and the stellarator devices and a glance on the future results that will be obtained using the Wendelstein 7 – X at IPP in Greifswald. The other classes presented topics as plasma kinetics, transport theory, MHD, computational plasma physics and diagnostics for fusion plasmas. In the end of the Summer University we got to know more exciting news about the working process for ITER, the milestone in the fusion research history. The lectures were held by dedicated professors and researchers from IPP, passionate people that really push forward day by day the research in the fusion field, making the dream closer and closer to reality.

During the week we had the chance to visit the Institute’s main sites, as the ASDEX Upgrade tokamak facility, Germany biggest fusion device, and its control room and the other facilities that serve as support for ASDEX Upgrade.

I got to know during that week spent at Max – Planck – Institute for Plasma Physics, Europe’s leading institute for plasma physics and fusion research, many extraordinary well prepared young professionals from all over Europe, full of devotion and passion for fusion and plasma physics research. Those young people are a strong source of inspiration for me and they gave me, for sure, another important quantity of “fuel” that will help follow my dreams. I am very confident that some of the students I met thanks to this Summer University will be the ones that will make the dream of having a fusion reactor reality.

The Summer University, perfectly organized by the IPP Garching through the sustained efforts of Dr. Roberto Bilato and Ms. Ingrid Kaufman, meant also going back to the beautiful city of Munich, the capital of Bavaria, a place where the calm and peaceful atmosphere of the old centre, with its cathedrals and the famous Marienplatz, fusion with the dynamic lifestyle of an important economical, cultural and political hub of Germany. The week ended with a pleasant visit at Deutsches Museum and a perfect dinner in a typical Bavarian restaurant where we shared our impressions about the programme, enjoying the Bavarian beer, and to promise each other that we will definitely meet again in the future, gathered together by the same passion for the world of fusion and plasma physics!