The visit to the Bremerhaven Alfred Wegener Institute for Polar and Marine Research was at the beginning designed for us to learn how to perform analysis with an underwater cell in an Atomic Force Microscope. The project was to teach a German student of the AWI how to perform standard analysis with the Atomic Force Microscopy (AFM) in Paris, and then learn with him the special features of the underwater cell equipment. However, the AFM which was supposed to be used for the first part broke just before the German student arrived in Paris. Moreover, the AFM was still not operational for the visit in the AWI.

Therefore, the program of the visit changed completely. The main activity was networking, meeting the other persons in the lab, learning with them the techniques of Foraminifera and cocoliths growth and the specificity of the biomineralization within these organisms.
However, some scientific experiments were performed during the visit. The experiment was done in Ulm, where the AWI plans to purchase a confocal Raman microscope. The test experiments were held during the visit. They were performed on Foraminifera, but also on different mollusk shells prepared at UMR IDES (Orsay). The two species studied were shells from *Pinctada margaritifera*, the Polynesian pearl oyster, and *Pinna nobilis.* The first specimen was studied more specifically where the mineralogy and the microstructure of the shell change. The ability of the Raman microscope to resolve *in-situ* mineralogy and crystallography allowed to study the modalities of these variations in the biomineral. The results are complementary with the « Time Of Flight-Secondary Ion Mass Spectrometer » (TOF-SIMS) results we have already acquired. Those informations ought to be pulled together and carefully analyzed, in order to get new hints on the chemical composition of the transitional part of the pearl oyster shell. Thanks to the confocal device, in-depth analyses were performed in order to track the continuity of the organic membrane surrounding each of the calcitic prisms of the external part.
The *Pinna nobilis* shell was studied for its prismatic calcitic layer, which is a quite simple example of prismatic calcification. The prisms, prepared to remove the organics surrounding each of the prisms, where scanned in order to find whether the layering they displayed may be tracked in the depth of the crystals, and to have an idea of the 3D shape of these layers.

All those results still have to be examined and interpreted, but they are already of great interest for the interpretation of the biomineralization process. The results will be integrated in the further papers submitted.
As the scheduled experiments were not performed, the collaboration with the AWI will include another exchange to complete it. Moreover, the Raman confocal microscope the AWI plans to buy is of great interest and very complementary for our studies, and may justify more analysis.