“Notes from the field”
Corinth Field Trip – fog, feta and faults!

Roxar runs a regular reservoir modelling field course to Greece; “From field data to reservoir model, via the Gulf of Corinth”. This 5-day field course includes 3 full days in the field with focus on geological heterogeneities and faulting at varying scales; fault seal potential is discussed in detail. In addition, RMS is used in several classroom sessions to show how the field site can be represented in the modelling environment.

The recent trip this October was attended by our intrepid reporter Emma Howley. Read on to hear a candid account of her experiences in the Greek mountains - from the fog in Kalavrita to the faults in Corinth!

Day 1 – 12th October 2009

The field trip got off to a good start – the weather looked great, no flights were delayed and all people and luggage met as planned! We hired 3 jeeps between the group of ten (8 students and our 2 field and course instructors for the week – Morten and Einar). After brief introductions we piled into our designated jeeps and set off for the 2.5hr drive to Kalavrita – a mountain village which was to be our home for the first 3 nights. The weather deteriorated on our drive into the mountains but we were buoyed by the prospect of a great course, great company and great food!

We arrived to a warm welcome at the hotel in Kalavrita where Morten and Einar were received like long lost relatives!

Day 2 – 13th October 2009

We headed up to the ski slopes this morning to get an overview of the area. Due to the wet weather we didn't hang around long and unfortunately the low cloud meant we didn't get the views we would have liked! On the way down we stopped at a road cut to take a closer look at our first fault, with a recap on the correct use of a compass clinometer. This was then put to good use with some scrambling around in the fault deformation zone to get estimates of width, displacement and fault orientation.

An enthusiastic discussion followed with a task to define a good (hypothetical) well location based on some basic facts we were provided with regarding the structure, and a hypothetical OWC. Some of the suggestions made were more feasible than others but looking at all the proposed options made for an interesting debate!

Other locations today gave a broad view and understanding of the large scale fault block geometries. To get a unique view of tilted fault blocks in the area we headed to location four, and with the weather beginning to clear, we were rewarded with a great profile view. Here sedimentary development and the sequence of tectonic events were interpreted.

A long, busy and interesting afternoon followed with changeable weather, changeable road conditions and a variety of locations – from road cuts to the escarpments of a major fault which provides the boundary between lacustrine fluvial strata to the south and a sequence of deltaic and marine sediments further north.

After a full day in the field, the evening entertainment (looking at the RMS models of the region) was postponed until breakfast! Instead we headed to a local taverna for some entertainment of the Greek variety – fantastic food!

Day 3 – 14th October 2009

An early but relaxed start to the day, with a breakfast session of RMS modelling as everyone was keen to see how the fault blocks, basement and sediments, seen in the field yesterday, could be represented in RMS. After this we headed out into unexpected sunshine for the morning! It didn't last long but as it kept dry we could make our way up to a steep field locality of alluvial conglomerates to take a closer look at a smaller internal fault within one of the major fault blocks.

The fault core and footwall damage zone were clearly visible, and the locality provided a perfect opportunity to look for evidence of brittle deformation of pebbles depicting shear fractures within the damage zone. There was some scepticism to begin with, as we hunted high and low for this small scale evidence, but after a bit of Einar's expert guidance we found there was plenty to see!

A small hike further up the hill gave superb views of the surrounding landscape and the crest of the fault block which had, by now, become a recurring feature of the trip!

On retracing our steps back down the hill to the jeeps (a lot faster than we had climbed it 2 hours earlier!) we had a picnic lunch which Morten, Einar and Lori had expertly prepared on the make-shift table (the boot of the jeep!) This substantial lunch of course included the local staples of Greek olives and feta cheese!

The afternoon led us on a quick detour to take in the famous Mega Spileion Monastery which is dwarfed by the surrounding cliff face. After this quick tourist stop we headed to more faults, a road cut providing a suitable location to take a look at some faults at a subseismic scale. Today's field localities also focussed on an explanation and lively discussion about fault networks and properties and their consequences for fluid flow or fault sealing capabilities.

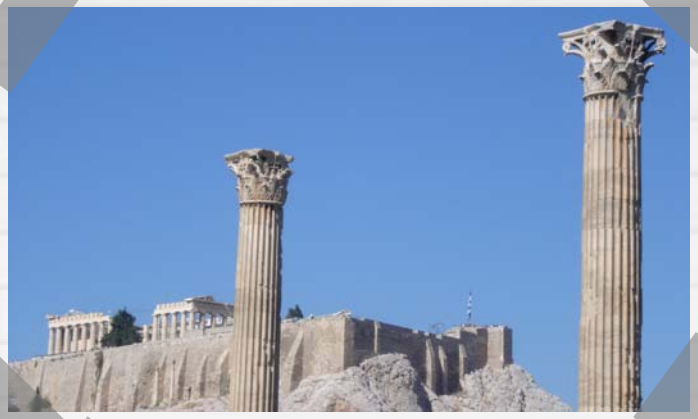
This discussion continued into the evening with a more detailed look at the fault sealing capabilities in RMS and how this can be reflected with streamline simulations using the grid model we had of one of the main fault blocks.

Day 4 – 15th October 2009

We left Kalavrita and headed for the coast and Corinth. A number of short stops were made on the way to take advantage of good examples of the fan deltas and marine sequences found in this area. But the highlight of the day came at the Corinth canal. The 100m deep channel walls provide a unique profile of the alluvial and beach deposits and the section cuts across a number of normal faults.

It was fairly easy to pick out and match up the faults on either side of the canal walls. Detailed sketching of a fault zone and a close look at the zone material ensured that another animated discussion ensued regarding possible communication across the faults!

The discussion waned as it began to get dark and we headed toward our final night's accommodation in Loutraki – a seaside resort a short drive from Corinth.



Day 5 – 16th October 2009

To round the trip off there was the opportunity for an early morning dip in the Gulf of Corinth but, on this occasion, no one was eager – most had the aim to stay warm and dry for the first time in 5 days!! So we headed off for the airport and said our goodbyes – some heading for home while others hadn't quite had their fill of rocks and structures so headed for the slightly less ancient structures in Athens.

Roxar usually schedules this course twice a year – in the Spring and Autumn. You can see full course details and register at:

http://www.roxar.com/category.php?categoryID=2140