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REAL UPM PROJECTS

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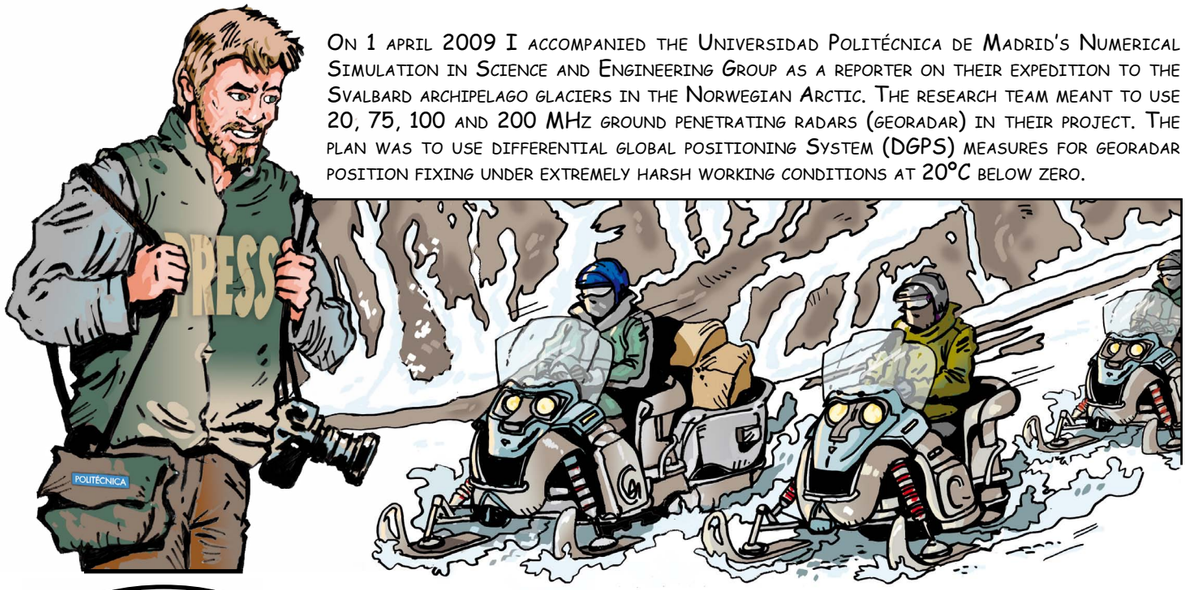
February 2013

Glaciodyn Project

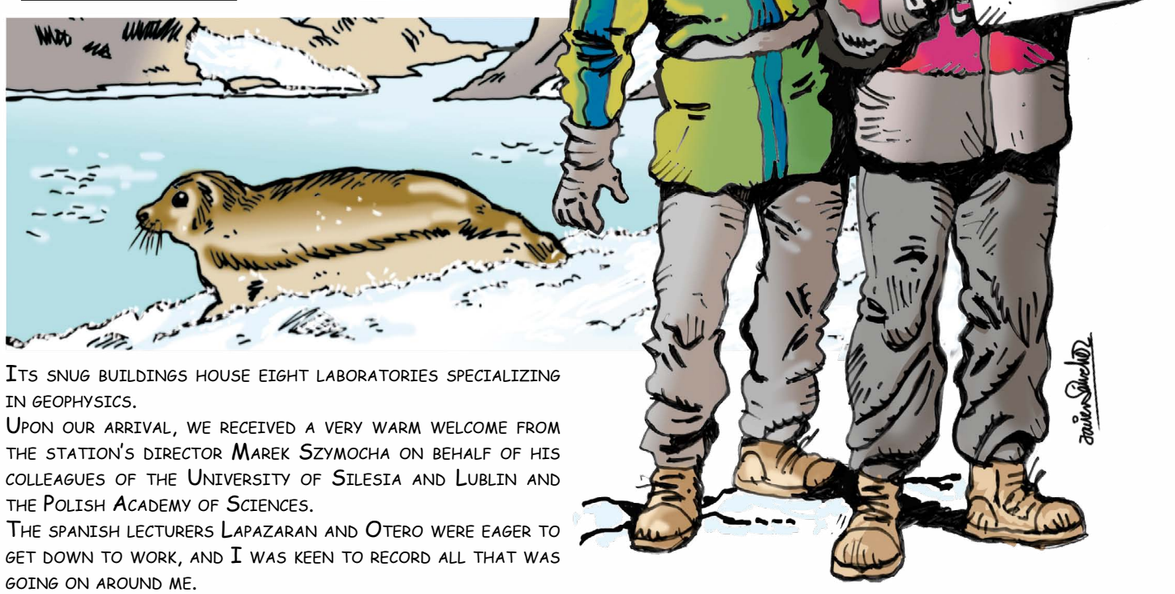
IN THE NORWEGIAN ARCTIC

NUMERICAL SIMULATION IN SCIENCE AND ENGINEERING GROUP, UPM
School of Telecommunications Engineering
(Escuela Técnica Superior de Ingenieros de Telecomunicación)

On 1 april 2009 I accompanied the Universidad Politécnica de Madrid's Numerical Simulation in Science and Engineering Group as a reporter on their expedition to the Svalbard archipelago glaciers in the Norwegian Arctic. The research team meant to use 20, 75, 100 and 200 MHz ground penetrating radars (georadar) in their project. The plan was to use differential global positioning System (DGPS) measures for georadar position fixing under extremely harsh working conditions at 20°C below zero.

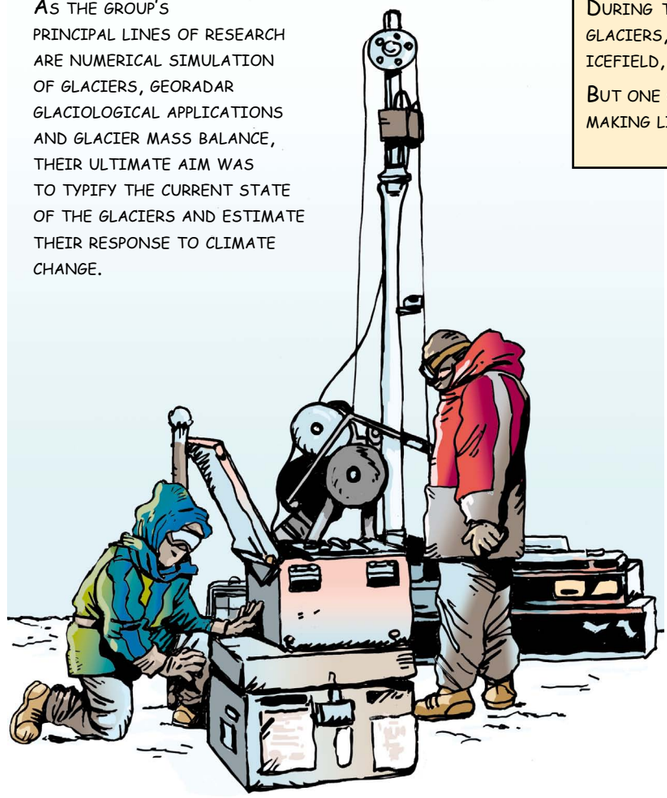


It was not long before we reached the Polish station on Hornsund Fjord, south of Spitsbergen, the larger of the two islands in the Svalbard archipelago.
Located 1,452 kilometres from the North Pole and 16,252 kilometres from Spain's Juan Carlos I Antarctic base, the station was first set up in 1957 and remodelled as a permanent base in 1978.

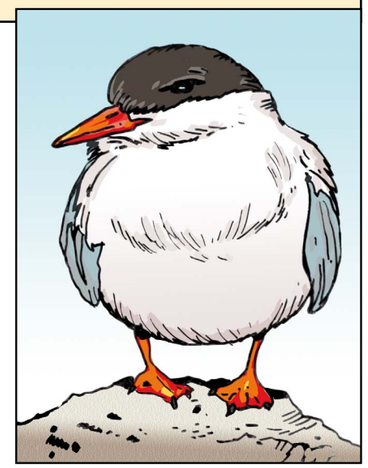


Its snug buildings house eight laboratories specializing in geophysics.
Upon our arrival, we received a very warm welcome from the station's director Marek Szymocha on behalf of his colleagues of the University of Silesia and Lublin and the Polish Academy of Sciences.
The spanish lecturers Lapazaran and Otero were eager to get down to work, and I was keen to record all that was going on around me.

As the group's principal lines of research are numerical simulation of glaciers, georadar glaciological applications and glacier mass balance, their ultimate aim was to typify the current state of the glaciers and estimate their response to climate change.



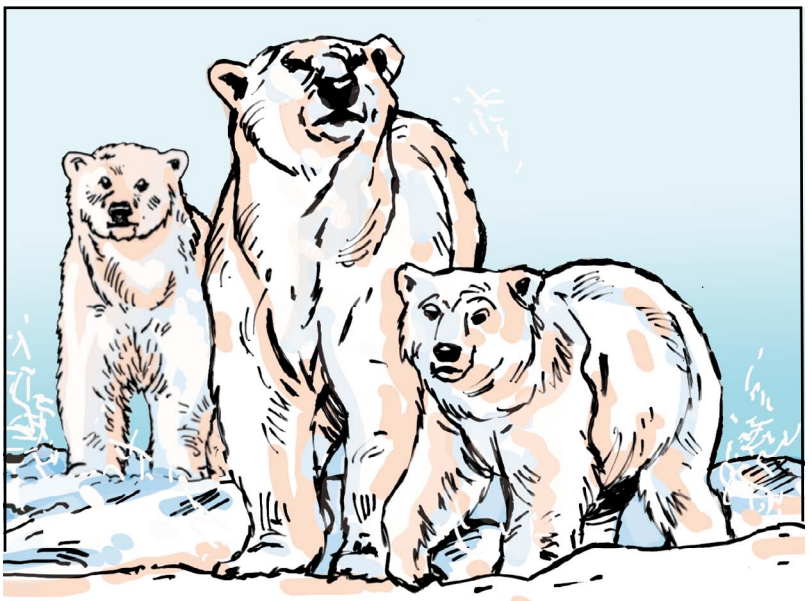
During the campaign, the researchers focused on three glaciers, Hansbreen, Ariebreen and the Amundsenisen icefield, all located within a 40 km radius of the base.
But one of the island's smaller residents was intent on making life difficult for us...



The Arctic Tern is one of the most aggressive members of its family and ferociously defends it nest and young.

The birds attacked us, pecking at our heads, which we only just managed to keep safe from harm. Despite the hazards, we all kept working away enthusiastically.

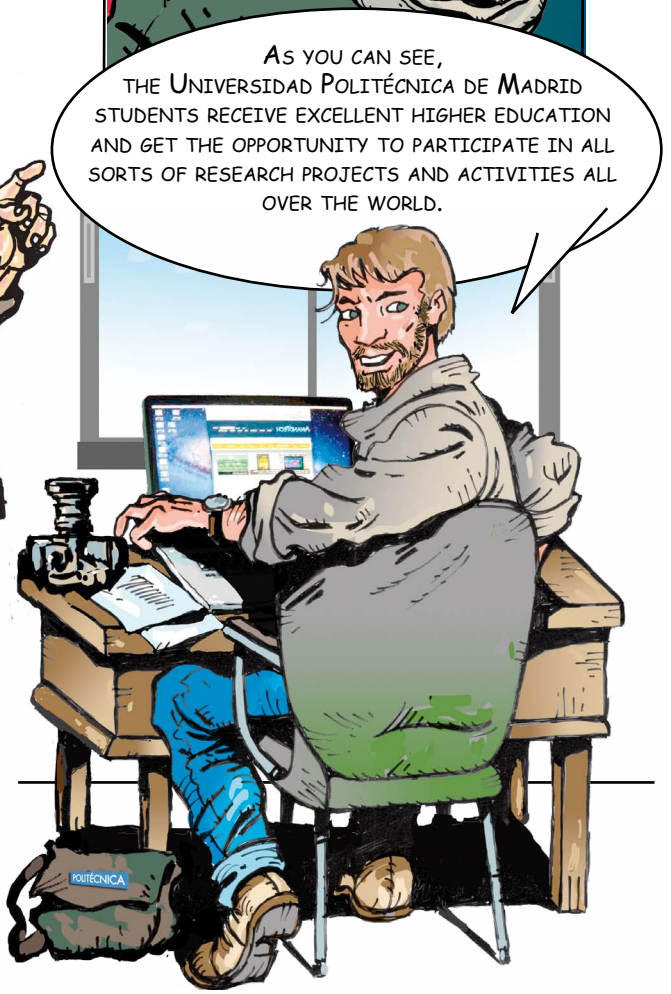
Our guides were constantly on the lookout for polar bears which were known to prowl the area.
There had been 98 polar bear sightings around the polish base in 2009.
These animals are extremely aggressive and potentially dangerous.



On one of our expeditions, the imposing figure of a bear and her two cubs suddenly loomed on the top of a hillock. It's hard to tell who was most frightened, us or her. To be on the safe side, our guide got his rifle to the ready to scare her away.

But the bear simply eyed us like unwelcome visitors, and, after a few nerve-racking moments, she silently lumbered off behind the mound in the glacier with her cubs.

That evening our Polish colleagues organized an enjoyable farewell get-together for us, which we spent reminiscing on that and many other remarkable and thrilling anecdotes. The research group returned to Spain on the next day having fulfilled all its expectations. And I, for my part, had some magnificent material for a report.



Script and illustrations: Javier Sánchez