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The Building Blocks of Our Climate

An Interview with Professor Francis Poulin, Oceans Mathematician
University of Waterloo

What is oceanography?

Oceanography is a rather new science compared to others. It's been quantitative maybe for the last fifty years or so. Studying the oceans at the large scales, understanding what happens below the surface and understanding what happens at depth, trying to understand how they move, how they're formed, where they're going to go, has some impact in terms of what's happening in the ocean because of the physics, and also, could be biology as well. We've known the basic equations that describe the ocean for quite some time, but solving them is a rather difficult task that involves using computers to try to solve these equations as best we can, and also a lot of physical understanding to try and make things as simple as possible, without making things too simple.

Why is studying ocean currents important?

I think it's trying to understand the basic physical questions of why are things the way that they are. It's really hard to understand these big ocean models that people are using to understand how things are changing in the oceans and the atmosphere if we don't have a solid understanding of the little blocks that put these things together. As one example is the Gulf Stream: being able to predict its evolution better is something that people are very much interested in, because of the fact that the glaciers are melting and people are making predictions that the Gulf Stream is slowing down, that it is something that we don't necessarily understand yet and it's becoming more of a repressing issue. It's a very rich area that has a lot of different facets to it that can excite lots of people including myself.