As a postdoctoral fellow at IARC, Alessio Gusmeroli studies glaciers, snow, and permafrost, with a strong focus on observations and field research. He contributes to the research activities of many organizations and projects, such as the Alaska Climate Science Center (AK CSC) research unit of IARC. Gusmeroli began his work at UAF as a postdoc in the Department of Geology and Geophysics in 2010, and has since led and published research on the application of geophysical methods for understanding ice sheets, glaciers, freshwater ice, snow, and permafrost.

IARC’s Publications team interviewed Dr. Gusmeroli recently about his research, interests, and background.

What do you think people would find interesting about your work?

Nearly all of my research has focused on measuring the invisible or exploring the unknown subsurface. In geophysics, we use signals to explore aspects of the earth that would otherwise remain hidden. Think of a glacier—when you are skiing over it, you often know little about what’s beneath you. Surely there is ice, but how thick? Does it contain any liquid water? Does it flow over a bump or a depression? All these components are necessary for understanding very fundamental earth processes like glacier erosion or glacier changes. With geophysical (such as radar or seismic) methods, we can understand many things about the subsurface. We can measure how thick the ice is, probe its temperature, detect water, and determine the geomorphology of the area. We can also detect water under freshwater ice and ice bodies within the permafrost, as well as objects buried in thick snow.

How does your work as an earth scientist impact your larger communities, such as IARC and Alaska?

The datasets we are producing will help calibrate hydrological models necessary to understand freshwater delivery to rivers and oceans, as well as sea-level rise. These models may also be used to understand fish habitats. And we are collecting hydrological data in order to assess flood hazards and water supplies for hydroelectric usage.

I also try to bring science to a wider audience. I am serving as editor of Changing Ice, a newsletter for cryosphere research in Alaska, and I participate in education and outreach activities and engage young people in science too. I worked with middle school students during a weeklong earth science summer camp in the North Slope this summer, for example. I find it extremely important to engage many types of people through our work. By sharing our deeper understandings of the earth, perhaps we can inspire others and make positive changes.

Do you have interests outside of your scientific study? What brought you to Alaska?

I came to Alaska for its wilderness. Growing up in the Italian Alps, surrounded by snowy mountains, Alaska was always a dream place for me. I love dogs, the outdoors, martial arts, music, and friends. I also enjoy microfarming—I’m proud to say I have successfully overwintered our chickens.

Visit IARC at: www.iarc.uaf.edu
Visit Dr. Gusmeroli at: http://www.iarc.uaf.edu/people/agusmeroli