How can I rewatch or share a recording of this webinar?
A recording of this webinar can be found here.

How can I get a PDF of the slides and the recording of the first SAR webinar?
We encourage you to watch Part 1 and Part 2 of our SAR Webinar Series if you haven't already.
While watching the recording there is a form that will pop up asking if you would like to receive the slide deck and other useful resources via email.

Are the SAR tutorials available to anyone?
Yes they are! There are several SAR tutorials available on the SARmap website at the bottom of the page (http://www.sarmap.ch/wp/index.php/software/sarscape/). We are also in the process of developing more SAR tutorials that will be available on our website (https://www.harrisgeospatial.com/Learn).

In the case of earthquakes or volcanoes, how can we use SAR to get valuable info?
SAR is a tool that is used quite often for information on earthquakes and volcanoes. Commonly, interferograms are used to see the movements over faults lines as they are able to detect those ground movements. We showed an example in the 2nd webinar of using Displacement Insar to see deformation that was occurring on the island of Hawaii. SBAS and PS, long term time series deformation, can also track for much smaller movements that are occurring.

You may also introduce very different atmospheric affects that can affect your outputs, since it is more likely that the atmosphere has changed the longer your window gets between the two scenes. There are also shifts that can occur in satellite orbits, however Orbital Files exist that help correct for these changes. SARscape has an automatic download for Sentinel-1 Auxiliary data to help you acquire these orbital files.

For land deformation analysis, what type of Sentinel-1 imagery should we use?
When you are doing any techniques with interferometry or coherence you need to use Single Look Complex (SLC in the case of Sentinel-1) imagery. This is because you need both the real and imaginary portions, which are not included in the Ground Range Products.

Is it possible to use interferometry techniques to measurement displacement on land pipeline?
Absolutely, you can use SBAS or PS to track fine scale changes around pipelines to see if movement is occurring.

When calculating the land subsidence using time series INSAR data, do we assume the linear trend of change?
If you are using Persistent Scatterers, it only assumes linear change. If you are using Small Baseline Subsets, then it is best to start with a linear trend of change, unless you already know what kind of velocity model would fit best. When you reach the end of the 1st inversion step you can check if this actually fits your situation, and re-do it with either a cubic or quadratic model.

Can one obtain vegetation height from SAR imagery?
Technically, yes. To do this you need field data, such as the actual height of some of your trees of interest. You can track backscatter responses and compare it to your known tree heights and can get a relationship between the two.

How do you decide use of say 6 Sentinel radar scenes versus 40-50? Is more always better?
When you are doing techniques such as SBAS or PS, you want at least 20 scenes. This is to make sure that you have good information and you have the ability to get those fine scale changes.

The coherence threshold you showed is very low. Will that still give you good results?
We showed the coherence threshold at 0.2, which is the absolute lowest you should set it. It is a really delicate balance between adding areas of low coherence that may add noise or losing large areas because you set the threshold too high. But never go under 0.2, that is when you are just going to end up with very noisy and messy interferograms.

Is it possible to find the soil moisture?
You can find relative soil moisture when using SAR. Wet soil responds differently than dry soil, so you are able to do a comparison between the two to track the changes that are occurring in soil moisture.

Why should you combine optical and SAR imagery?
By combining both optical and SAR data you are building off of the basis of optical information, such as spectral indices and other methods, and adding in physical characteristics that are in the SAR data. This gives you much more complete information on your areas of interest and can aid in classification and understanding of what is happening at the ground surface level.

Can you do SBAS over vegetated areas?
It depends on the type of coverage. Dryland environments with sparse vegetation can usually be pierced by radar bands, but heavy canopies will not allow most bands to reach the ground surface. The use of L or P band may be able to go through or you may be able to get through thinner areas of the canopy to track smaller areas.

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