Subject: gaussian air dispersion model
Posted by guillaume.drolet.1 on Thu, 24 Nov 2005 16:48:58 GMT
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Hi,

I am using spatial remote sensing data (reflectances over vegetation) along with field eddy-covariance data, i.e. energy and mass fluxes from towers to develop better ways of estimating forest productivity.

For a given period, the vegetated area contributing to the fluxes (footprint) depends on several factors (e.g., wind speed and direction,surface roughness length, etc.) and can be modeled using a footprint model.

To extract the data for the pixels contributing to the measured fluxes, I will use an across-wind integrated footprint model that will give me the across-wind distance (x-extent) of the footprint (i.e., the minor axis of an ellipse). Since I have several periods of flux data for which I need to run the footprint model, I cannot use a fully-parameterized footprint model that would give me the along- and cross-wind extents of the footprint. Thus, I need to use a gaussian dispersion model to estimate the along-wind distance. Knowing both x- and y- extents, I will be able to create ellipses that will serve as my 'ROIs' to extact reflectance data.

Since I do almost all my work with IDL, I am looking for IDL ways of estimating along-wind distances of the footprints using a gaussian dispersion model (functions, procedures, etc.). I don't have a strong background in physics so I need some solutions I will understand. My background is mostly in forest sciences and remote sensing and I do a lot of programming.

Thanks a lot for your help.

Gui