



Some Research into Wetting in Natural Systems

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We have been investigating some natural systems that turn out to have some interesting similarities to soil. Our recent focus has been on the wings of insects, in particular locally available butterfly, dragonfly and damselfly species. These can be shown to repel water highly efficiently under some conditions and to become less repellent or even sticky under others. Although we have not fully characterized the system yet, it shows a time delay similar to that observed on water repellent soils and seems to be related in some ways.

We are also beginning to investigate how soils, or more particularly composts behave when electrically stimulated at different frequencies. We hope to be able to extract information about the liquid in the soils from this technique and therefore to be able to rapidly characterize samples. Significant parameters being the liquid fraction and the distribution of particles. This technique typically gives considerably more and more robust data than single frequency or D.C. measurements.