Abstract—The talk will address a significant problem in environmental analysis and other inspection areas: The determination of subsurface composition using non-invasive techniques. Ground Penetrating Radar (GPR) data will be used to illustrate the type of results that can be obtained in very shallow depths such as in pavement analysis. The talk will then focus on the problems of using similar techniques to try and see to depths of about one hundred meters. We will present some very recent results based on the continuous wavelet transform.