Holomorphic G-convergence

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Classical homogenisation problems for self-adjoint coefficient matrices for divergence form equations are abstractly described by the notion of G-convergence. A notion coined by Spagnolo in order to analyse the properties of the process without having to resort to particular example cases. In the talk, we want to analyse homogenisation problems with sign-indefinite coefficients. The ill-posed nature of the problem class considered requires a more general viewpoint to classical G-convergence. Introducing so-called homolomorphic G-convergence, we are able to address the limits of highly irregular problems. We present an example case, where sequence of local divergence form problems with coefiicients uniformly bounded in the homogenisation parameter produces a nonlocal equation of 4th order with unbounded coefficients.