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Compressible flows with anisotropic diffusion in stationary regime

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The first result concerning the problem of the existence of weak solutions "à la Leray'", in dimensions 2 or 3, for the stationary Navier-Stokes system governing the flow of compressible, viscous fluids was obtained in 1998 by P-L. Lions under the hypothesis of isotropic diffusion at constant shear and volume viscosities.
In this talk I will present a new proof of this result, witch will allow us to consider in the equation of momentum a diffusion operator that can be anisotropic or non-local. This is a physically relevant situation, for example for mixtures, which was outside the framework of the theory developed by Lions. This is joint work with Didier Bresch.

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