

# Twenty five years of working on exciting mathematical problems with Antonin Novotny

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The aim of this talk is to recall the twenty five years of working together with Antonin Novotny, a great mathematician and an excellent teacher and colleague. Starting with problems of incompressible fluid mechanics, as estimating convolutions with Oseen kernels which resulted into several applications of spatial asymptotic structure of solutions to different non-Newtonian models, several problems connected with compressible Navier–Stokes equations in unbounded domains, steady and time periodic solutions to compressible Navier–Stokes–Fourier system ending up with questions of presence of vacuum regions in weak solutions to compressible Navier–Stokes equations or extremely complex models of compressible mixtures. All these problems studied together with Antonin in the beautiful area around Toulon influenced my career and helped me to understand better the wonderful world of mathematical fluid mechanics.