

## **Time-periodic solutions to the full Navier–Stokes–Fourier system**

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We consider the full Navier-Stokes-Fourier system describing the motion of a compressible viscous and heat conducting fluid driven by a time-periodic external force. We consider homogeneous Dirichlet boundary condition for the velocity and Newton-type boundary condition for the temperature, i.e. the system is allowed to dissipate the thermal energy through the boundary. Under certain additional assumptions on the model we show existence of at least one weak time-periodic solution to our problem. Such a boundary condition is in fact necessary as energetically closed fluid systems do not possess non-trivial (changing in time) periodic solutions as a direct consequence of Second law of thermodynamics.

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