

[Talk 22] Pressure in active systems

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Pressure is the mechanical force per unit area that a confined system exerts on its container. In thermal equilibrium, the pressure depends only on bulk properties (density, temperature, etc.) through an equation of state. The talk will show that in non-equilibrium active systems containing self-propelled particles, the pressure instead can depend on the precise interactions between the system's contents and its confining walls. This implies that generic active systems have no equation of state. Implications of this result as well as forces on general objects embedded in an active fluid will be discussed.