Basis of the balanced chassis: Active PASM shock-absorber system

One of the first active chassis systems that Porsche implemented and is still continuously developing is the Porsche Active Suspension Management, or PASM for short. This combines two chassis in one: a sporty yet comfortable chassis for long journeys and an exceptionally sporty chassis for the race track. The normal setting provides a more comfortable basic configuration of the dampers, and switches to a more sporty mode if the vehicle is driven more dynamically. This increases comfort levels, particularly long motorway journeys, as the PASM absorbs minor to moderate bumps in the road surface significantly better than a standard passive chassis. In contrast, the sport setting activates harder damper characteristics that support a highly agile driving style. The reduced car body movements make it easier to achieve fast lap times on the race track.

The PASM responds in a flash to dynamic changes during driving. For example, the system increases damper force to both axles in the event of sudden steering movements, e.g. during unexpected manoeuvres to avoid an obstacle. This reduces lateral inclination or instability of the body and makes it significantly easier to control the vehicle, particularly in extreme situations. In normal mode, the damper force is increased if the vertical movement of the body exceeds a certain value, for example when driving over bumps in the road surface. This reliably prevents instability of the vehicle body. In contrast, sport mode slightly reduces the damper force as car body movements increase to improve contact between the wheels and the road. This prevents any jumping or displacement of the car, while at the same time noticeably improving comfort. In normal mode, depending on the vehicle speed and lateral acceleration, the damper force is set differently for the inner side and outer side of the vehicle when cornering. This prevents vehicle instability and significantly increases driving precision. The damper characteristics are adjusted individually for the front and rear axle during heavy acceleration, during gear changes and when the accelerator pedal is released.