



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

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DEPARTMENT OF AUTOMOBILE ENGINEERING

AUTOMOTIVE SAFETY & INFOTRONICS

UNIT V – INFOTRONICS FOR AUTOMOBILES

TOPIC 6: DRIVER ASSISTANCE SYSTEM





PRESENTATION OUTLINE



- Introduction
- ABS
- ACC
- BSD
- DDD
- ESC
- EBS
- HDC





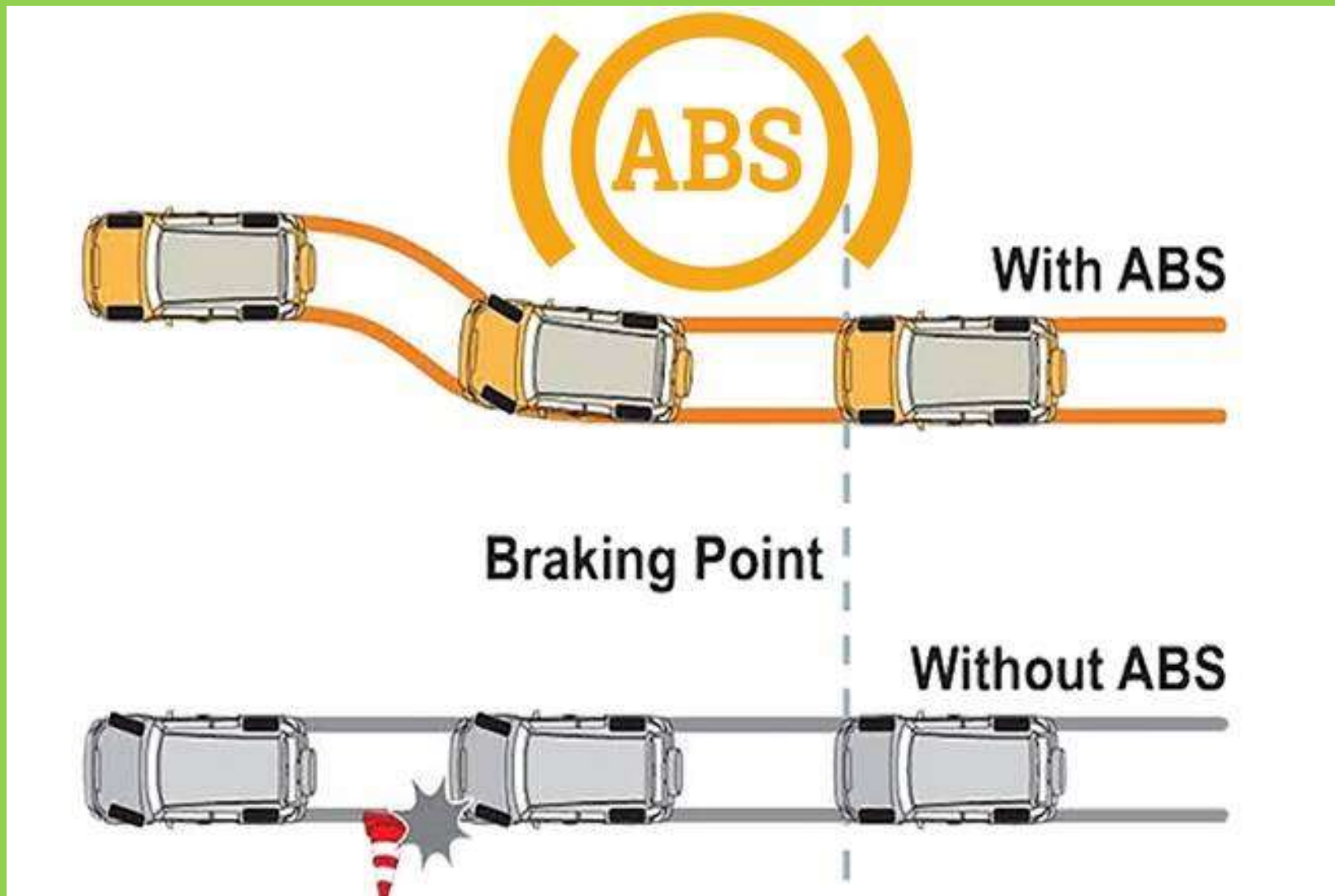
INTRODUCTION



- Advanced driver assistance systems are designed to increase car safety more generally road safety
- Basically Advanced driver assistance systems help the driver in the driving process and enable safe, relaxed driving
- It makes sense to get your new car with driver assist features



ANTILOCK BRAKING SYSTEM



- Antilock braking system mainly known as ABS
- It allows the wheels to maintain traction control with the road surface while stop braking (Emergency Braking)
- Prevents the wheels from locking up and avoid uncontrolled skidding



ADAPTIVE CRUISE CONTROL



- Adaptive Cruise Control (ACC) uses forward looking radar and maintains the safe distance from the car ahead
- It is designed to avoid accidents by keeping your vehicle from a safe distance from traffic ahead



BLIND SPOT DETECTION



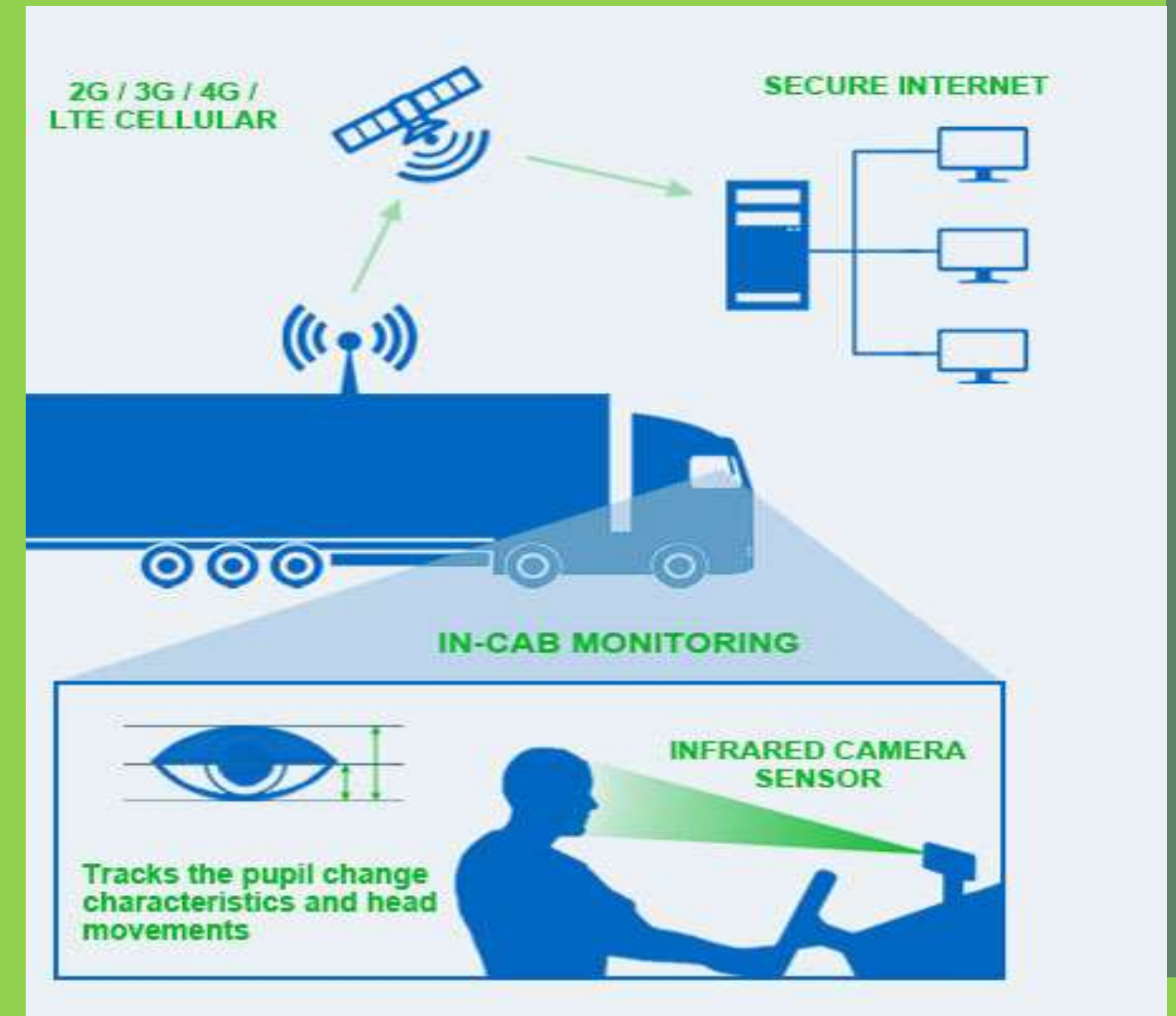
- A blind spot detector detects other vehicle located in the blind spot areas such as side and rear, however it detects other areas as well
- Blind spot areas are hard to detect when you are specially driving in the night and any cyclist stops in your blind spot area



DRIVER DROWSINESS DETECTION

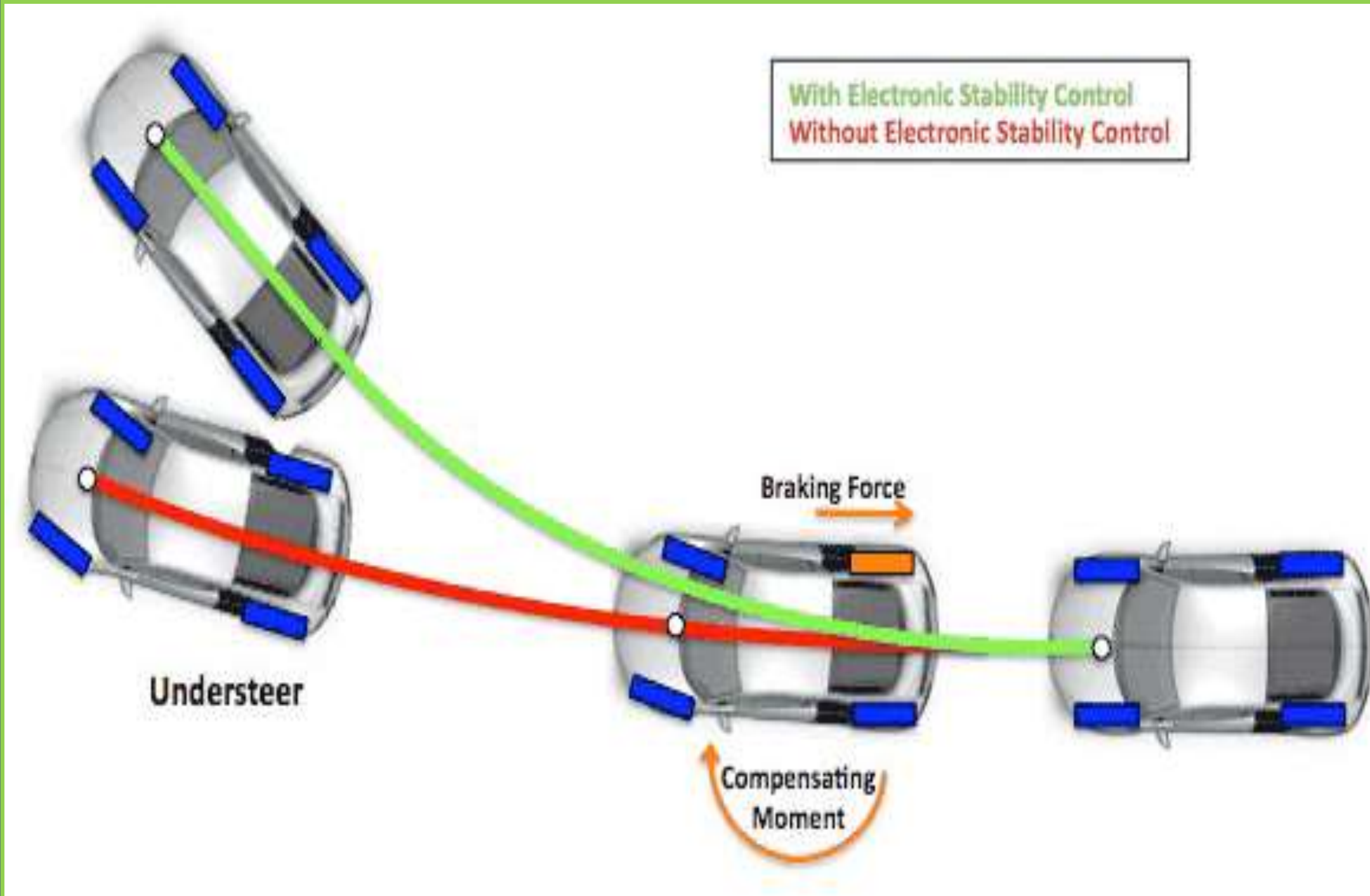


- Driver drowsiness detection is another car safety technology that designed to prevent accident when driver is getting drowsy and often fails to recognize early enough according to the experts
- In this case attention assist warns the driver for extending speed range and offers adjustable sensitivity of warning is emitted, also indicates the nearby service areas in the navigation system





ELECTRONIC STABILITY CONTROL



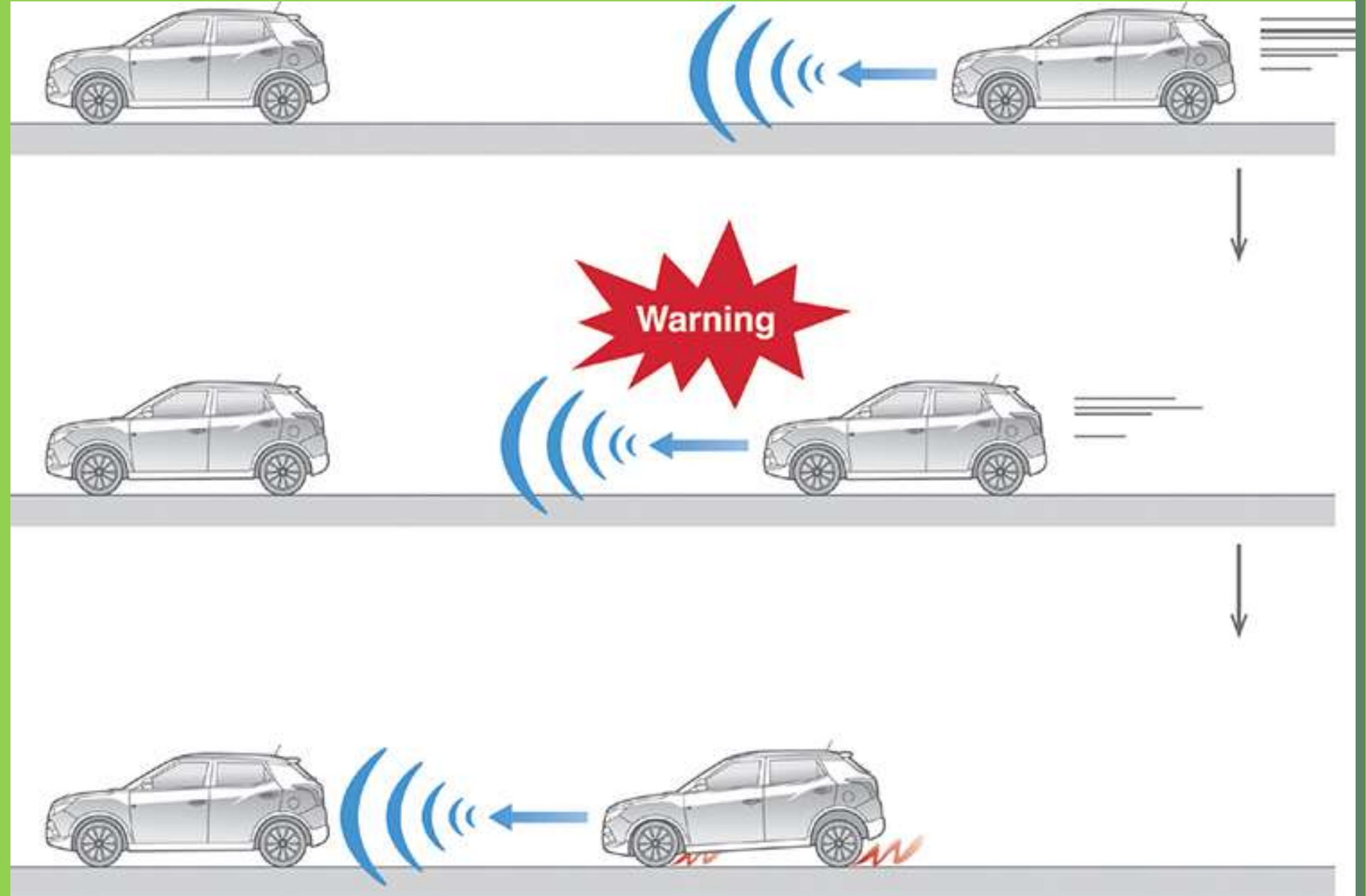
- Electronic Stability Control (ESC) is a computer technology improves a vehicle stability control by reducing loss of traction or skidding
- When ESC detects the loss of steering control, automatically applies the brakes to help steer the vehicle



EMERGENCY BRAKING SYSTEM



- Automatic emergency braking (AEB) systems detect an impending forward crash with another vehicle in time to avoid or mitigate the crash
- If the driver's response is not sufficient to avoid the crash, the AEB system may automatically apply the brakes to assist in preventing or reducing the severity of a crash





HILL DESCENT CONTROL



- Hill descent control is a driver-assistance system
- It allows a controlled hill descent in rough terrain without any brake input from the driver



REFERENCES



- George A. Peters, Barbara J. Peters, “Automotive Vehicle Safety” CRC Press, 2002
- Richard Bishop, “Intelligent Vehicle Technology and Trends” Artech House, 2005

Thank you