where run several energies: mechanical, electrical, pneumatic, thermal it is submissive to many problems, strong coupling with the environmental sub-systems and variant energies. In point of fact four levels of modeling (technological, physical, mathematical and algorithmic) can be presented due to its functional, structural, behavioral and causal properties. In addition, vehicles are complex systems consisting of different subsystems in many physical domains that dynamically interact. In this regard, co-simulation strategies are particularly attractive as each subsystem is solved via tailored simulation tools with appropriate numerical methods regarding efficiency, and accuracy and integrating all fields. In this article, we presented the co-simulation strategies of dynamic modeling of the motorcycle. The research covered a wide range of topics, including modeling, simulation, and control of two-wheeled vehicles respecting a number of design and analysis considerations, including the integration of dynamics. Not only that, but we dealt also with another potential interest which showed how the knowledge of human behavior on the dynamics of a road vehicle and test the impact of the driver's motion on the behavior of the motorcycle and ameliorate the safety and security in an existed environment.

It is recommended to develop and implement an intelligent tool that secures the driver. This tool would be useful in assessing the body movements in real time and automatically distinguish normal driving after an accident using advanced algorithms, as to recognize the relevant characteristics, driving parameters (driving style, road characteristics, handling of curves).

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