Drowsiness is a major cause of various types of accidents. According to a recent study [1], drowsiness could account for 90,000 road accidents per year in France. Moreover 6-11% of the population suffers from excessive daytime sleepiness (EDS) [2]. Our study of drowsiness in a driving simulator is a key part of the development of a drowsiness monitoring system. The experimental design is intended to gather - in a simulated driving situation - signal, image, and driving data that is known to be indicative of drowsiness. This data will allow us to develop, test, and validate drowsiness monitoring systems. The preliminary results indicate that our experimental design provides data that constitutes a strong basis for detecting and quantifying drowsiness.

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**REFERENCES**