Modelling and control of a multisteered general n-trailer

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Abstract

The kinematic model of a multisteered general n-trailer is presented. It is shown that this model includes as particular cases the standard and general n-trailers commonly found in the literature. The model can also be adapted in order to cope with the case of multisteered general trailers without all the trailers being controlled. A discontinuous control law will be presented which allows to achieve global motion planning for the multisteered-general n- trailer. The control strategy consists in switching between three different output functions, so as to avoid the singularities associated to each output. The performance of the proposed scheme is illustrated by means of numerical experiments.