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## REDUCTION PRINCIPLE IN THE THEORY OF STABILITY FOR HOMOGENEOUS DIFFERENTIAL EQUATIONS<sup>1</sup>

## ANDREJS REINFELDS

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Consider the following system of differential equations in small neighbourhood of origin in  $\mathbb{R}^{n+k}$ 

$$\begin{cases} \dot{x} = X(x,y), \\ \dot{y} = Y_m(x,y) + g(x,y), \end{cases}$$
(1)

where  $Y_m(\lambda y) = \lambda Y_m(y)$  ( $\lambda \ge 0, m > 1$ ),  $X(x, y) = o((|x| + |y|)^m)$  and  $g(x, y) = o((|x| + |y|)^m)$ . We find sufficient conditions of the existence Lipschitzian map u in small neighbourhood of origin that the trivial solution of

$$\dot{x} = X(x, u(x)))$$

is stable, asymptotically stable or nonstable if and only if the trivial solution of difference equation (1) is stable, asymptotically stable or nonstable.

## REFERENCES

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