

# Characteristic vector fields of distributions - determination theorems

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## Abstract

In our presentation we consider generic distributions  $D \subset TM$  of corank  $k \geq 2$  on manifolds  $M$  of dimension  $n \geq 5$ . We show that singular curves of such a distribution determine the distribution on the subset of  $M$  where they generate at least two different directions. In particular, this happens on the whole of  $M$  if rank of  $D$  is odd. The distribution is determined by characteristic vector fields and their Lie brackets of appropriate order. We characterize pairs of vector fields which can appear as characteristic vector fields of a corank 2 distribution. The case  $k \geq 3$  is based on [2], the case  $k = 2$  is based on [1].

## References

- [1] B. Jakubczyk, W. Kryski, F. Pelletier, *Characteristic vector fields of corank 2 distributions*, in preparation.
- [2] W. Kryński, *Singular curves determine generic distributions of corank at least 3*, J. Dynamical and Control Systems, Vol.11, No.3 (2005), 375-388.