

# Linear sufficiency in linear regression model

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A linear statistic  $Fy$ , where  $F$  is an  $f \times n$  matrix, is called linearly sufficient for the  $Xb$  under the model  $M = \{y, Xb, V\}$ , if there exists a matrix  $A$  such that  $AFy$  is the BLUE for  $Xb$ . In this talk we review some specific aspects of the linear sufficiency and consider the relations of BLUE of the estimable parametric functions under the linear model  $M$  and its transformed version  $\{Fy, FXb, FVF'\}$ .

## References

- [1] Baksalary, J.K., Kala, R. (1981). Linear transformations preserving best linear unbiased estimators in a general Gauss-Markoff model. *Annals of Statistics* **9**, 913–916.
- [2] Baksalary, J.K., Kala, R. (1986). Linear sufficiency with respect to a given vector of parametric functions. *Journal of Statistical Planning and Inference* **14**, 331–338.
- [3] Drygas, H. (1983). Sufficiency and completeness in the general Gauss–Markov model. *Sankhyā, Ser. A* **45**, 88–98.
- [4] Kala, R., Puntanen, S., Tian, Y. (2015). Some notes on linear sufficiency. *Statistical Papers*, available online.