



**HAL**  
open science

## Imputation accuracy of crossbred dairy cows

L.-H Maugan, Iola Croué, Sebastien Fritz, Rachel Lefebvre, Pascal Croiseau,  
Chris Hozé

### ► To cite this version:

L.-H Maugan, Iola Croué, Sebastien Fritz, Rachel Lefebvre, Pascal Croiseau, et al.. Imputation accuracy of crossbred dairy cows. 71. Annual Meeting of the European Federation of Animal Science (EAAP), Dec 2020, Virtual meeting, Portugal. Wageningen Academic Publishers, Book of abstracts, 26, 2020, Book of abstracts of the 71st annual meeting of the european federation of animal science. hal-03634220

**HAL Id: hal-03634220**

**<https://hal.inrae.fr/hal-03634220>**

Submitted on 7 Apr 2022

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



## Imputation accuracy in crossbred dairy cows

UMT eBIS

Laure-Hélène Maugan<sup>1</sup>, Iola Croué<sup>2</sup>, Sébastien Fritz<sup>2</sup>, R. Lefebvre<sup>1</sup>, Pascal Croiseau<sup>1</sup>, Chris Hozé<sup>2</sup>

<sup>1</sup> Université Paris-Saclay, INRAE, AgroParisTech, GABI, 78350, Jouy-en-Josas

<sup>2</sup> ALLICE, MNE – 149 rue de Bercy, 75012 Paris

### Objective

- Determine which software is the best to impute crossbred animals
- Software used: Eagle, Beagle, FImpute

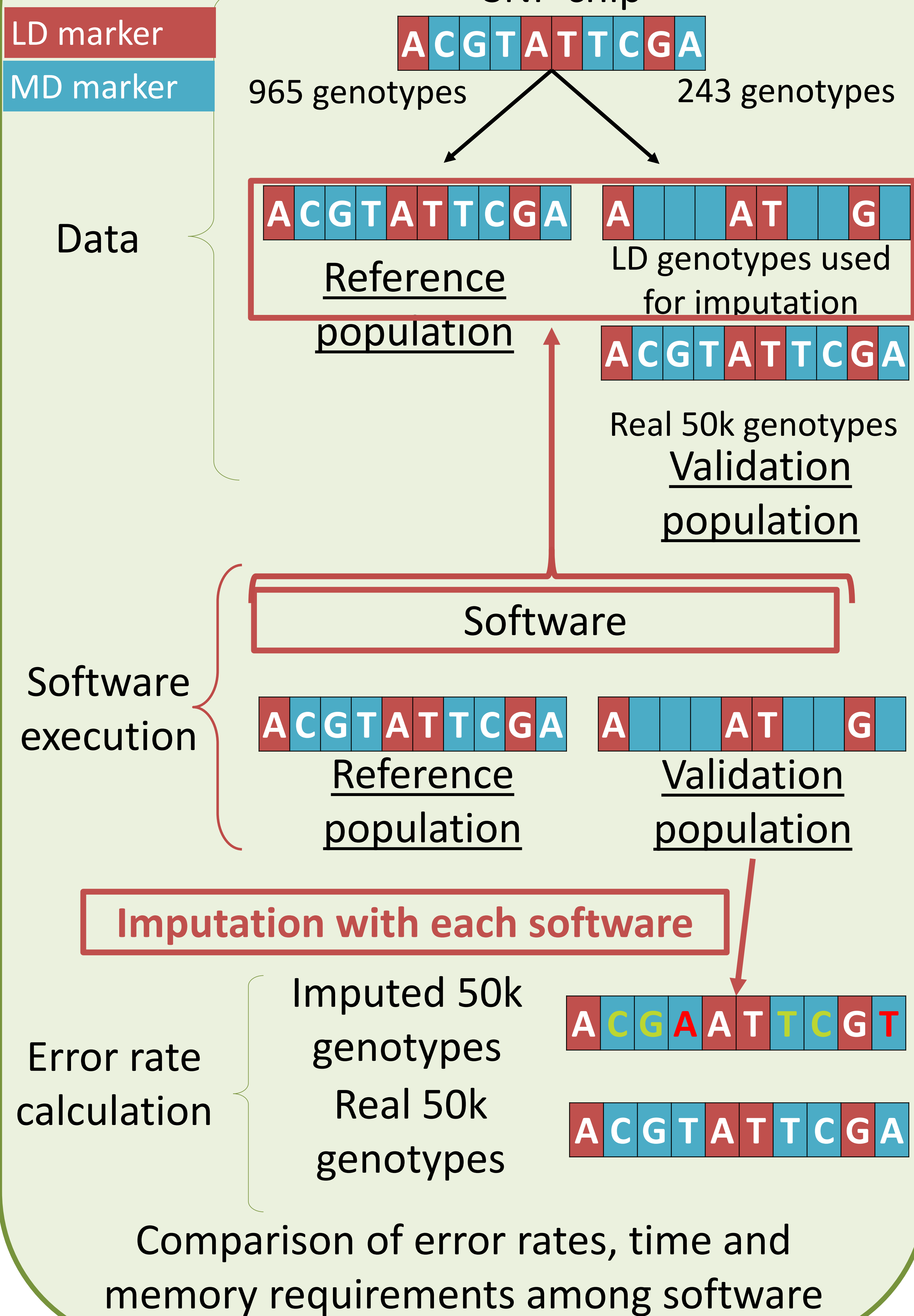
### Conclusion

FImpute is the most suitable software for the imputation of crossbred cows:

- Lowest error rate
- Fastest
- Lowest memory requirements

### Method

1208 genotyped cows in 50k SNP chip



### Results

	FImpute with pedigree	FImpute without pedigree	Eagle	Beagle with options	Beagle without options
Mean error rate	0.0048	0.0076	0.0222	0.1009	0.2359
Memory (MB)	19.10	21.45	453.82	735.79	829.36
Time (s)	9.72	15.93	304.21	18.03	22.28
Significantly best group		Significantly average group		Significantly last group	

Mean error rate, memory and time used by each software

FImpute has the lowest error rate. Conditions are optimal for its execution.

Eagle takes a long time for imputation.

Eagle and Beagle use a lot of memory because they use a Markov method.

