

Individual-level causes and population-level consequences of variation in fitness in an Alpine rodent

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UZH

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- Lukas Keller
- Barbara Tschirren
- Arpat Ozgul
- Marc Kéry
- Jarrod Hadfield



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- Eelke Jongejans
- Pirmin Nietlisbach
- Philipp Becker
- Judith Bachmann

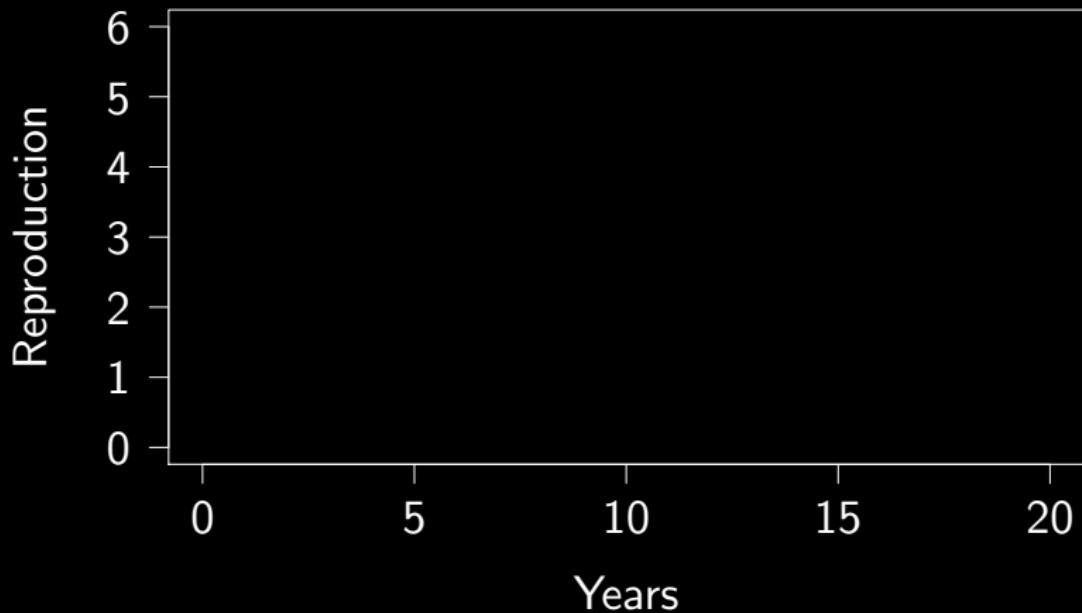


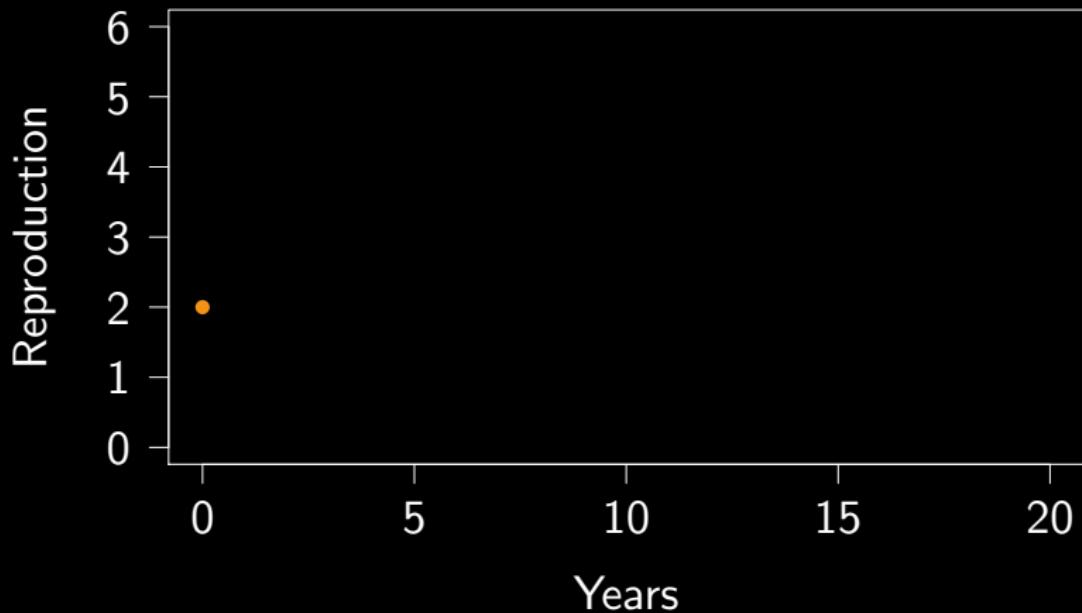


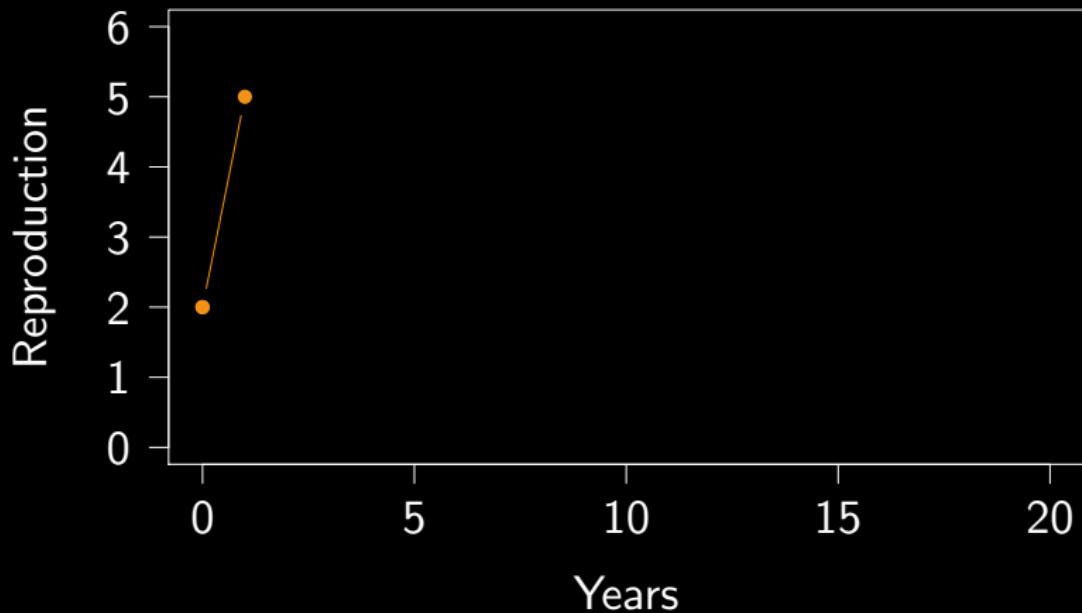
Phenotypic variation within population

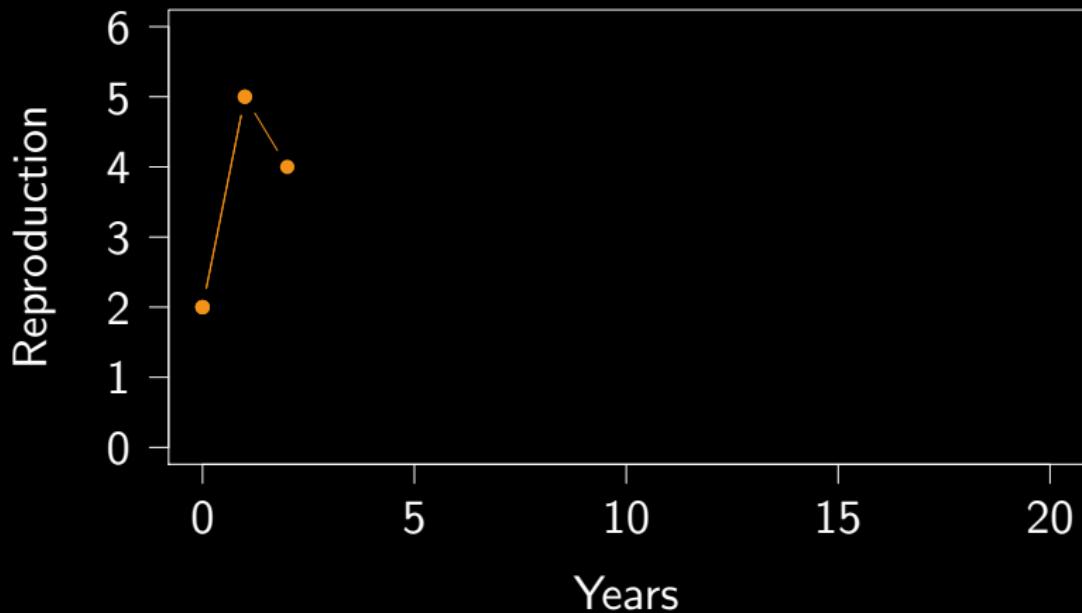


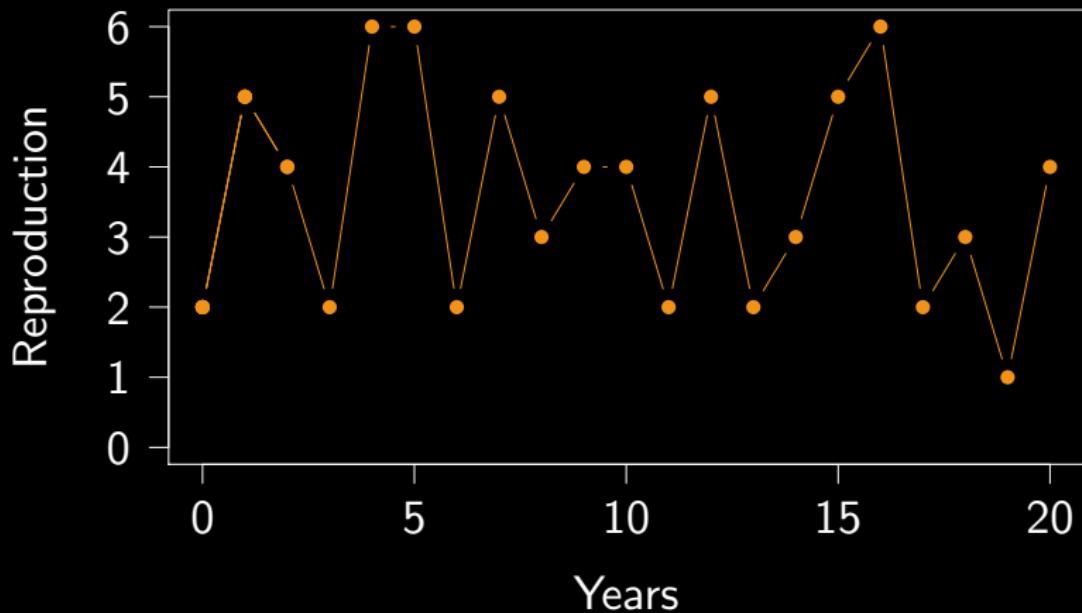


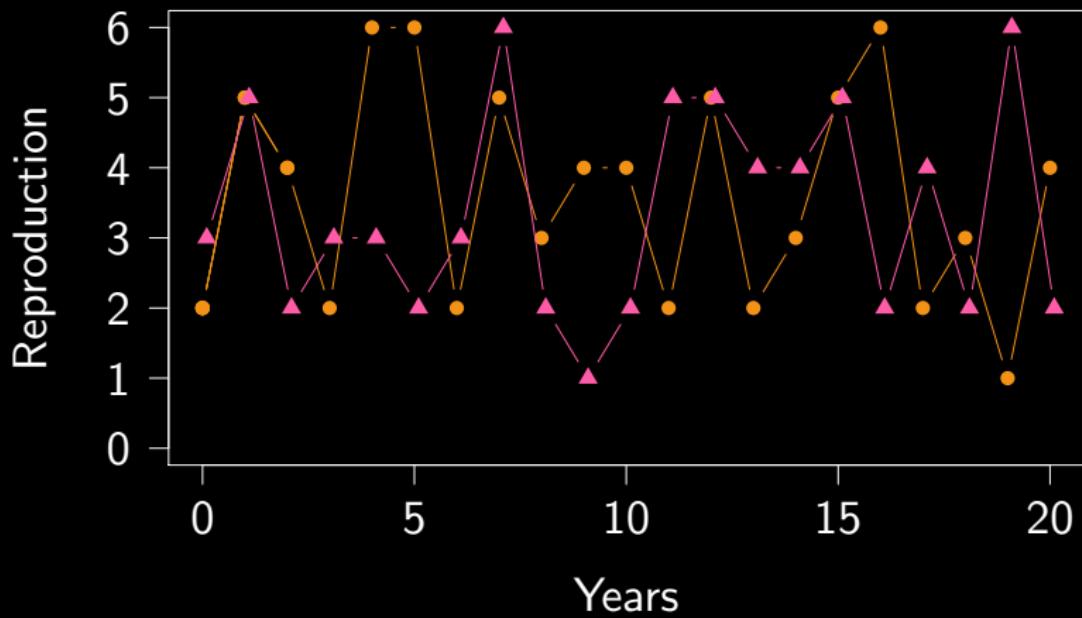


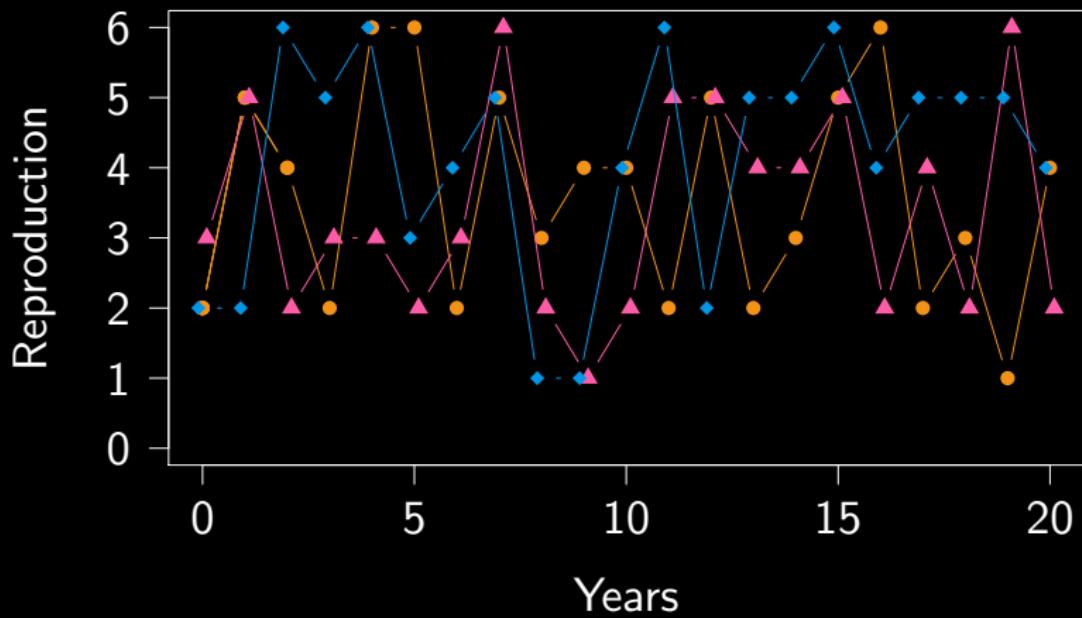




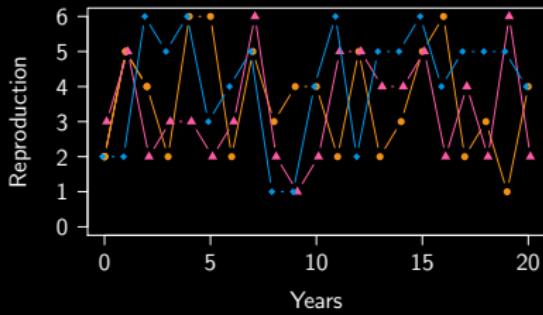




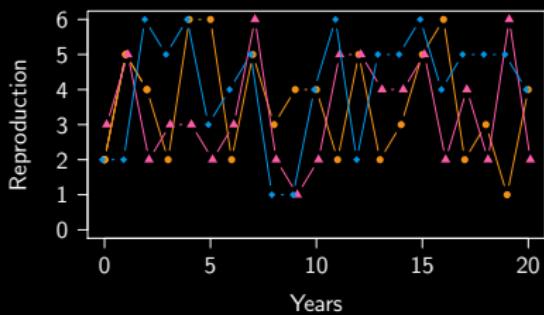




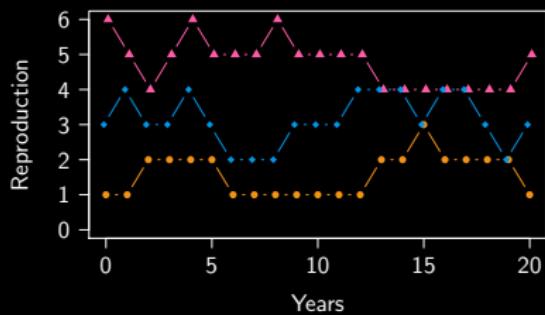
One dice theory



One dice theory



Real pattern



Neutral theory for life histories and individual variability in fitness components

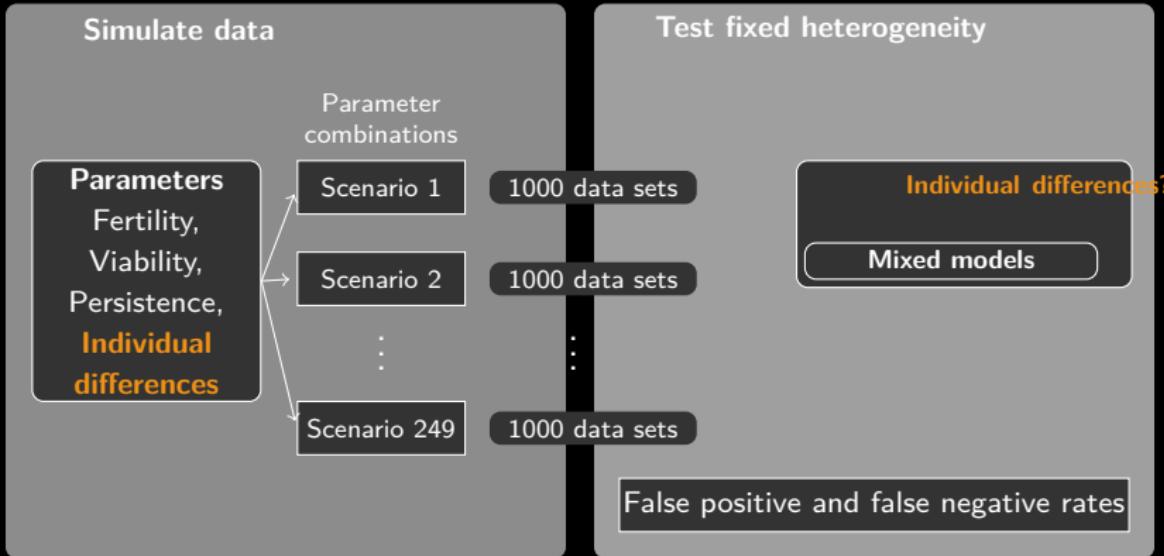
Ulrich Karl Steiner^{a,b,1} and Shripad Tuljapurkar^a

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Individuals within populations can differ substantially in their life spans and their lifetime reproductive success, but such realized in-

yes and that this stochastic variation has significant implications for both ecological and evolutionary studies.

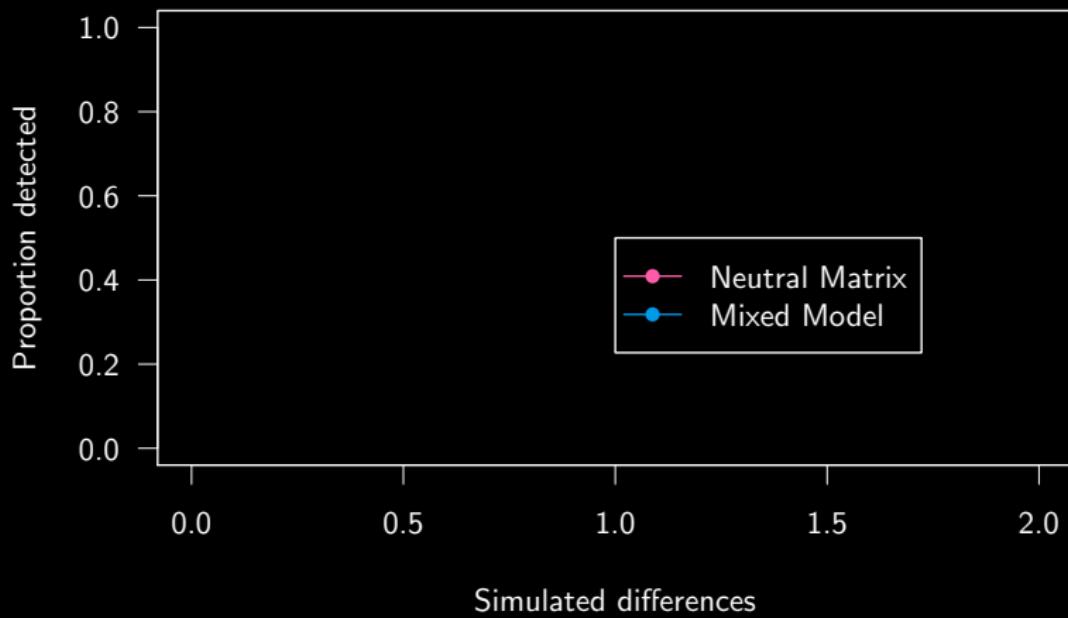


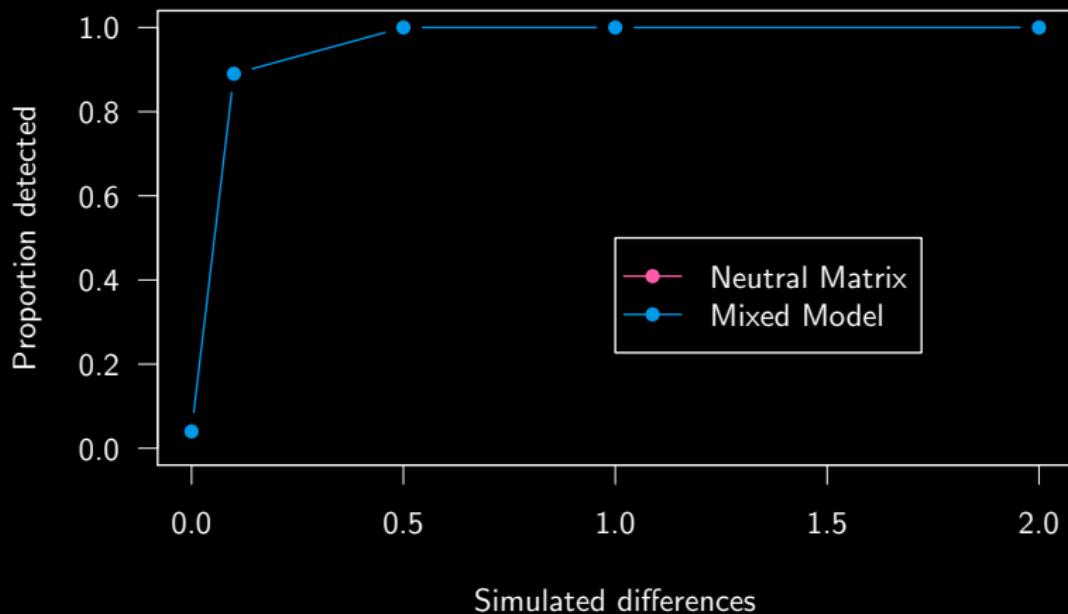
A: Data simulations

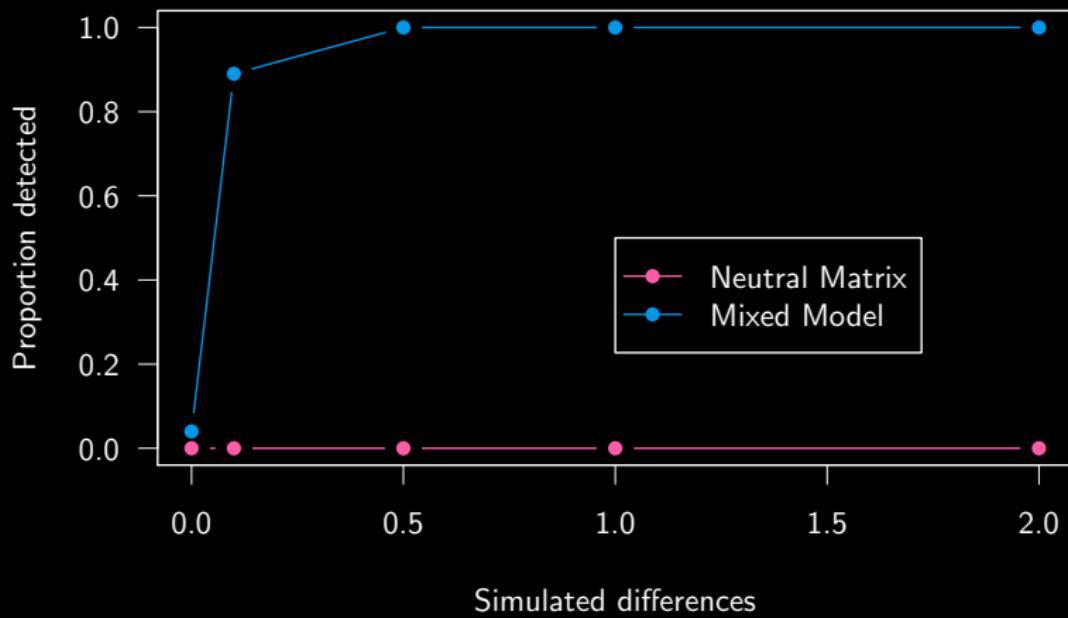
B: Tests for fixed heterogeneity

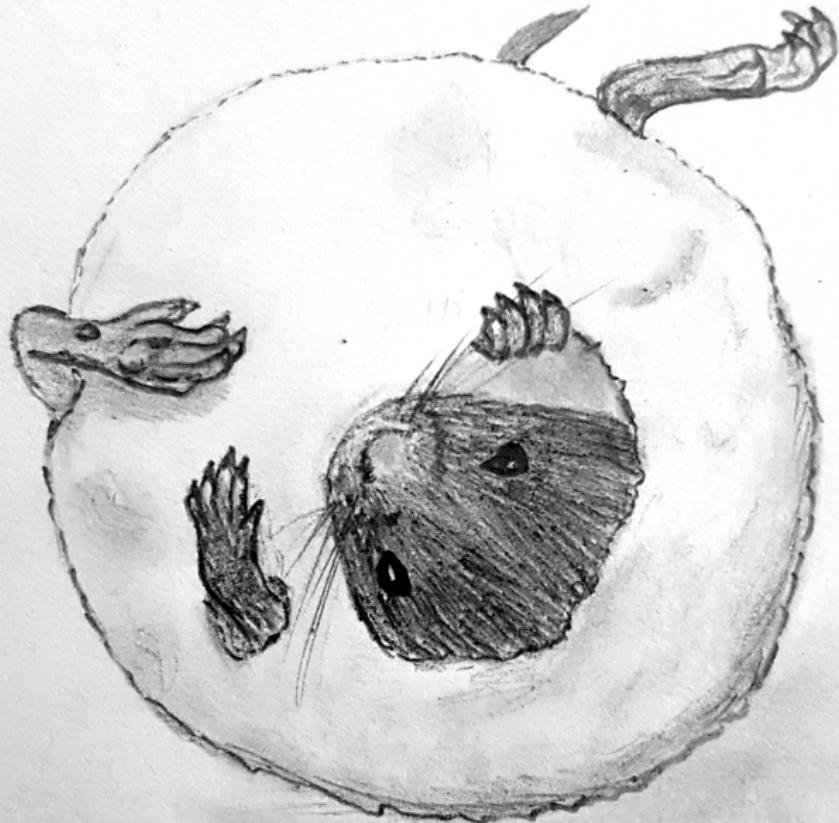
Parameter











Snow vole (*Chionomys nivalis*, Martins 1842)

- NOT white



Snow vole (*Chionomys nivalis*, Martins 1842)

- NOT white
- Rock-dweller



Snow vole (*Chionomys nivalis*, Martins 1842)

- NOT white
- Rock-dweller
- 30-45g



Snow vole (*Chionomys nivalis*, Martins 1842)

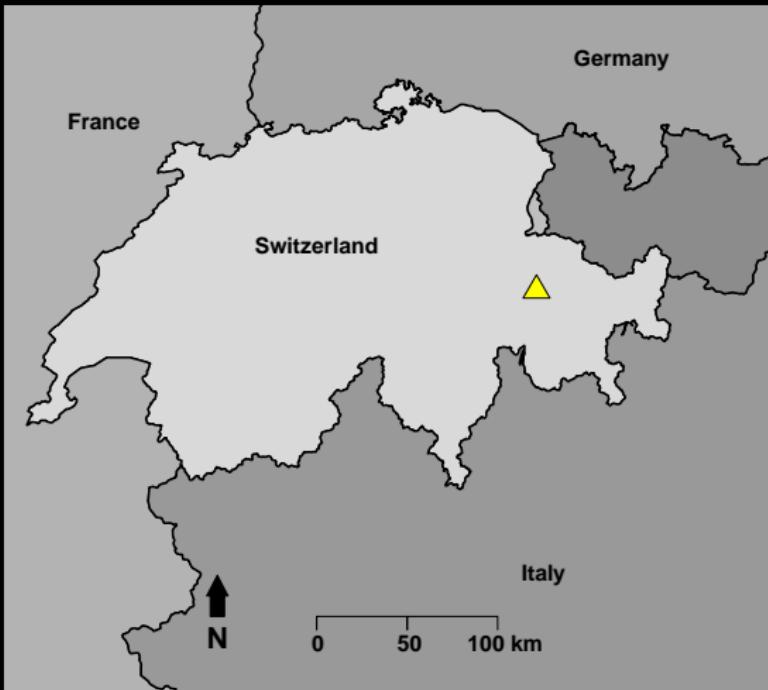
- NOT white
- Rock-dweller
- 30-45g
- 10-14cm long + 5-8cm tail



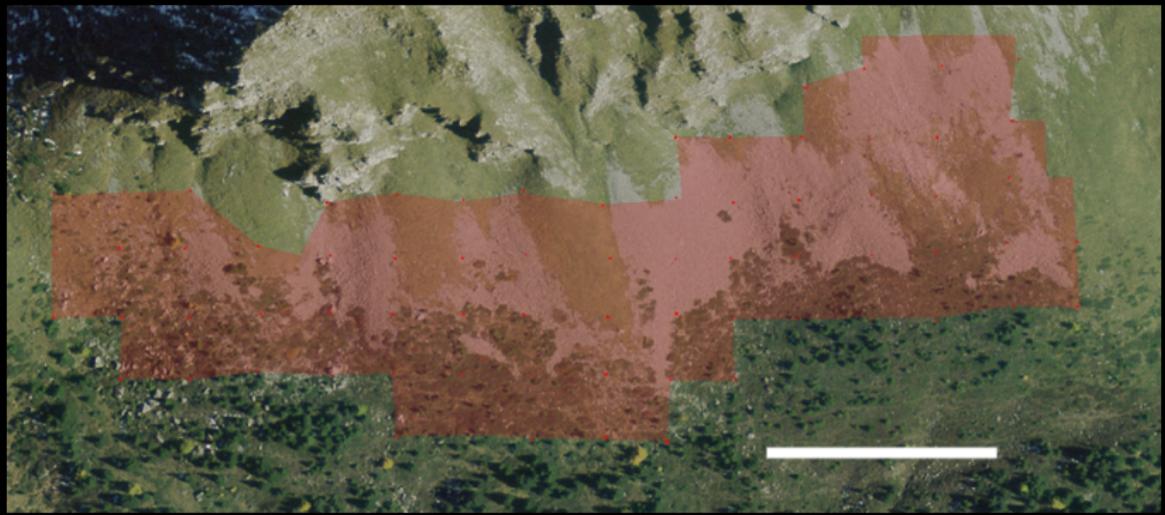
Snow vole (*Chionomys nivalis*, Martins 1842)

- NOT white
- Rock-dweller
- 30-45g
- 10-14cm long + 5-8cm tail
- Slow life pace













What we measure

What we measure

- Morphology
 - Body mass
 - Body length
 - Tail length



What we measure

- Morphology
 - Body mass
 - Body length
 - Tail length
- Capture/Recaptures
 - Death/emigration
 - Location



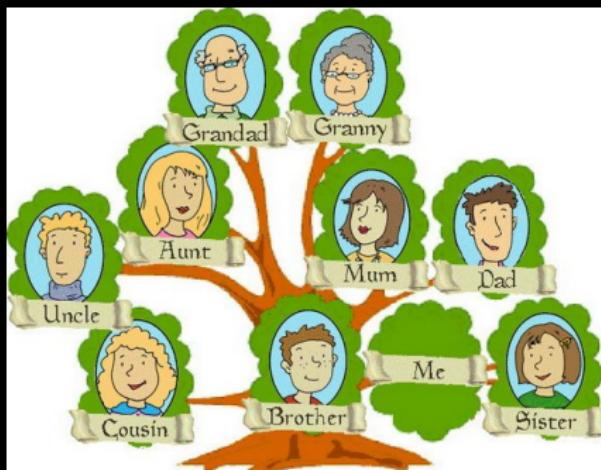
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- Morphology
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 - 20 “neutral” markers
 - Sex identification
 - Any genotyping



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 - **Pedigree**



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