LUBERON2 : a forest demo-genetic model to simulate the eco-evolutionary consequences of genetic diversity, disturbance regimes and management.

What is it ?

- It is a forest growth model with natural regeneration, stochastic disturbance regimes and genetic variation of quantitative traits related to growth, reproduction and survival
- It computes dendrometric, demographic and genetic variables to compare different scenarios of genetic architecture, genetic diversity, environmental conditions, disturbance regimes, and management scenarios.
- It can be used with a user-friendly graphical interface, in french or in english, or in a script mode for intensive simulations.

What for ?

- For research on eco-evolutionary processes in natural and managed forests
- For the exploration and assessment of management options
- For teaching and training

How to use it?

- It is available upon request
- It runs on a PC (Windows, Macintosh or, Linux), with Java
- Further documentation at https://capsis.cirad.fr/capsis/help_en/luberon2

References

- Godineau C., Fririon V., Beudez N., de Coligny F., Courbet F., Ligot G., Oddou-Muratorio S., Sanchez L., Lefèvre F. (2023). A demo-genetic model shows how silviculture reduces natural density-dependent selection in tree populations. Evolutionary Applications, 16:1830–1844. https://doi.org/10.1111/eva.13606
- Lamarins A., Fririon V., Folio D., Vernier C., Daupagne L., Labonne J., Buoro M., Lefèvre F., Piou C., Oddou-Muratorio S. (2022). Importance of interindividual interactions in eco-evolutionary population dynamics: the rise of demo-genetic agent-based models. Evolutionary Applications, 15:1988–2001. https://doi.org/10.1111/eva.13508
- Oddou-Muratorio S., Davi H., Lefèvre F. (2020). Integrating evolutionary, demographic and ecophysiological processes to predict the adaptive dynamics of forest tree populations under global change. Tree Genetics & Genomes 16:67 https://doi.org/10.1007/s11295-020-01451-1

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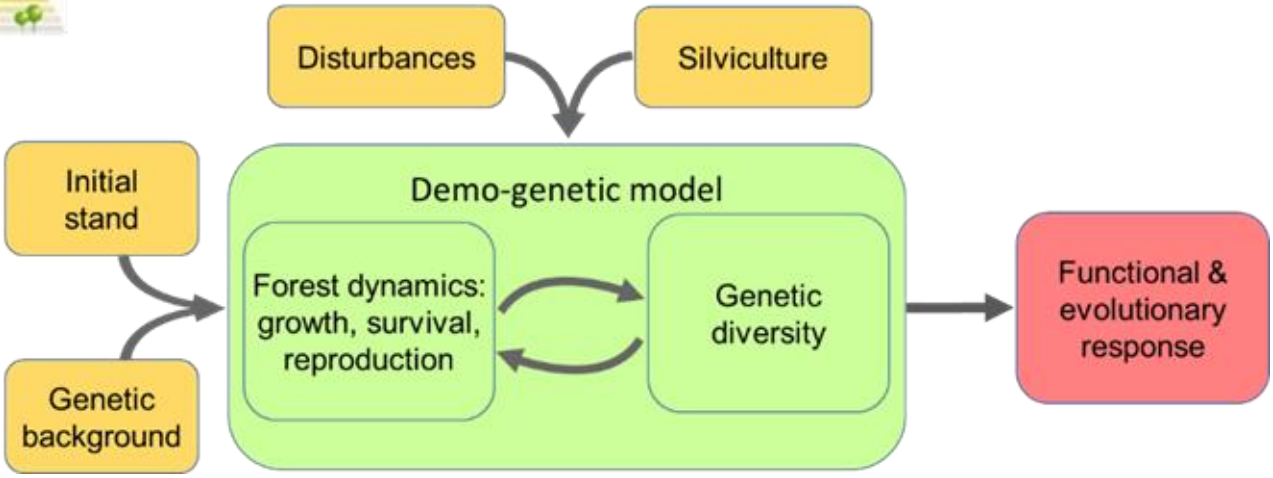
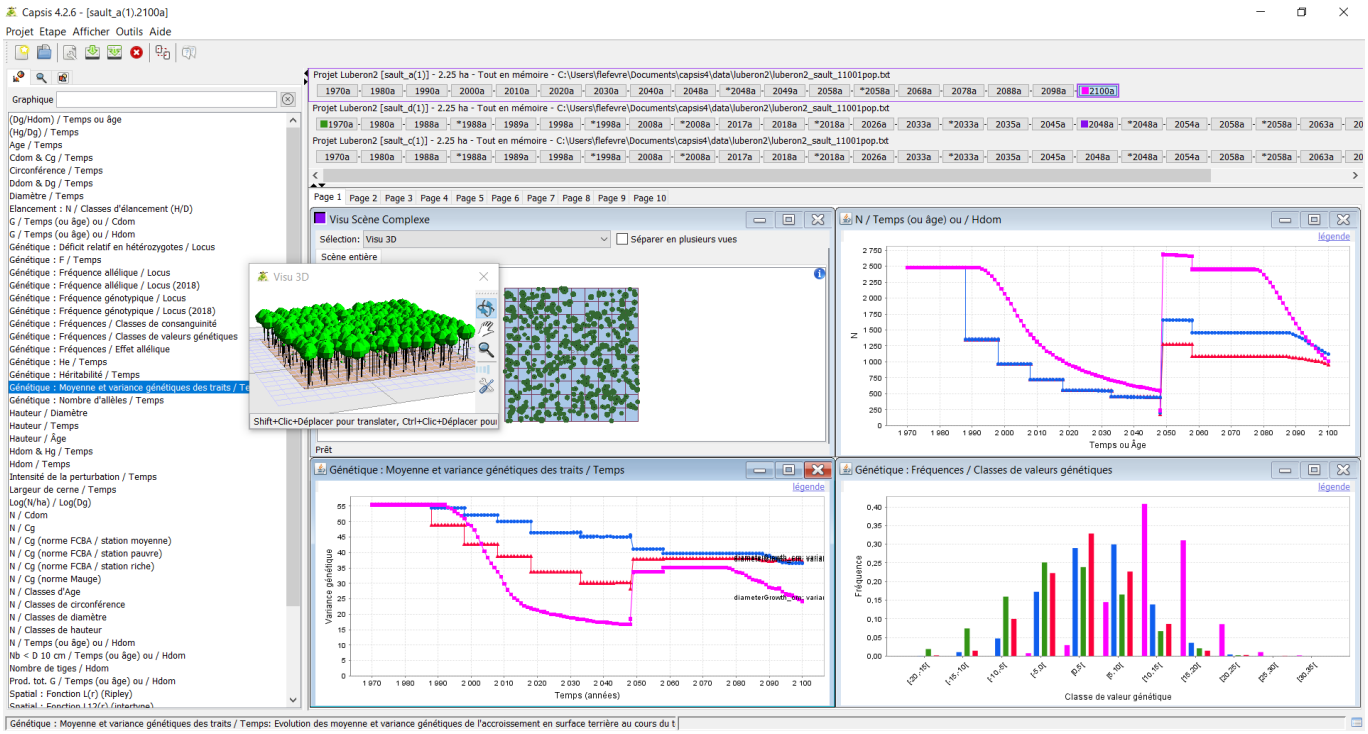

Disturbances
Silviculture
Initial stand
Demo-genetic model
Forest dynamics: growth, survival, reproduction
Genetic diversity
Functional & evolutionary response
Genetic background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Projet Etape Afficher Outils Aide
Visu Scène Complexe
N / Temps (ou âge) ou / Hdom
Génétique : Moyenne et variance génétiques des traits / Temps
Génétique : Fréquences / Classes de valeurs génétiques
Temps ou Âge
Temps (années)
Classe de valeur génétique