Supplementary

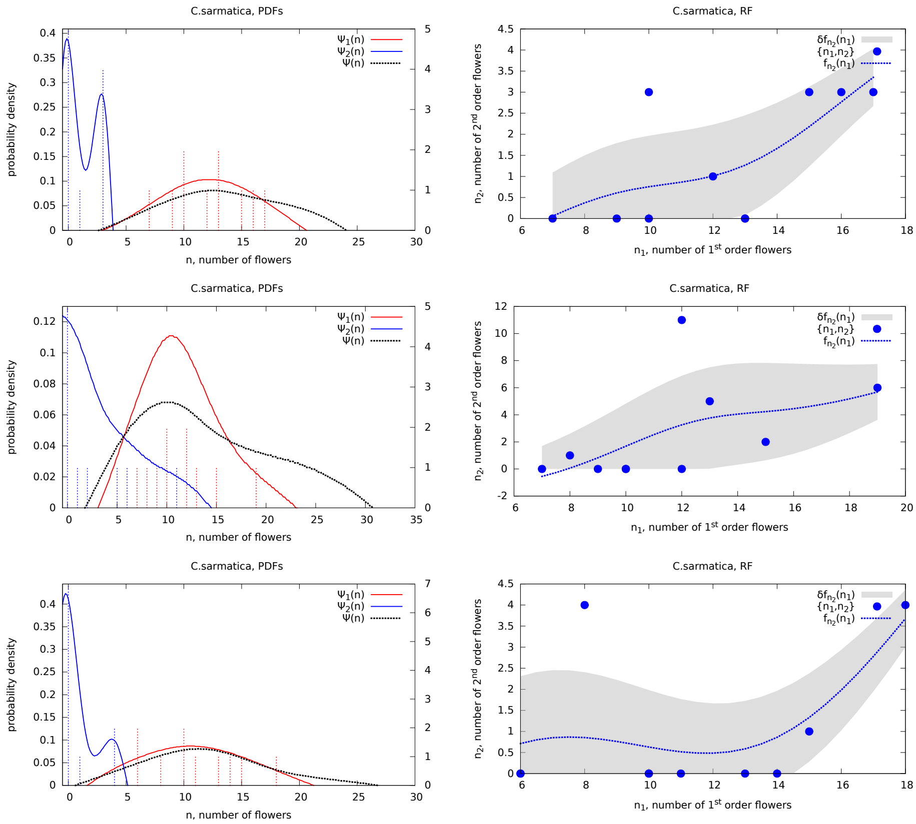

Figure 1: Examples for different years: Left: Probability density functions of the number of flowers on shoots $\psi(n)$ and the number of 1^{st} $\psi_1(n)$ and 2^{nd} $\psi_2(n)$ order flowers. Right: Regression curves $f_{n_2}(n_1)$ between the numbers of 1^{st} and 2^{nd} order flowers. Each row of the table contains data on one year (2009, 2010, and 2016, from top to bottom); each sample includes no less than ten *C. sarmatica* shoots

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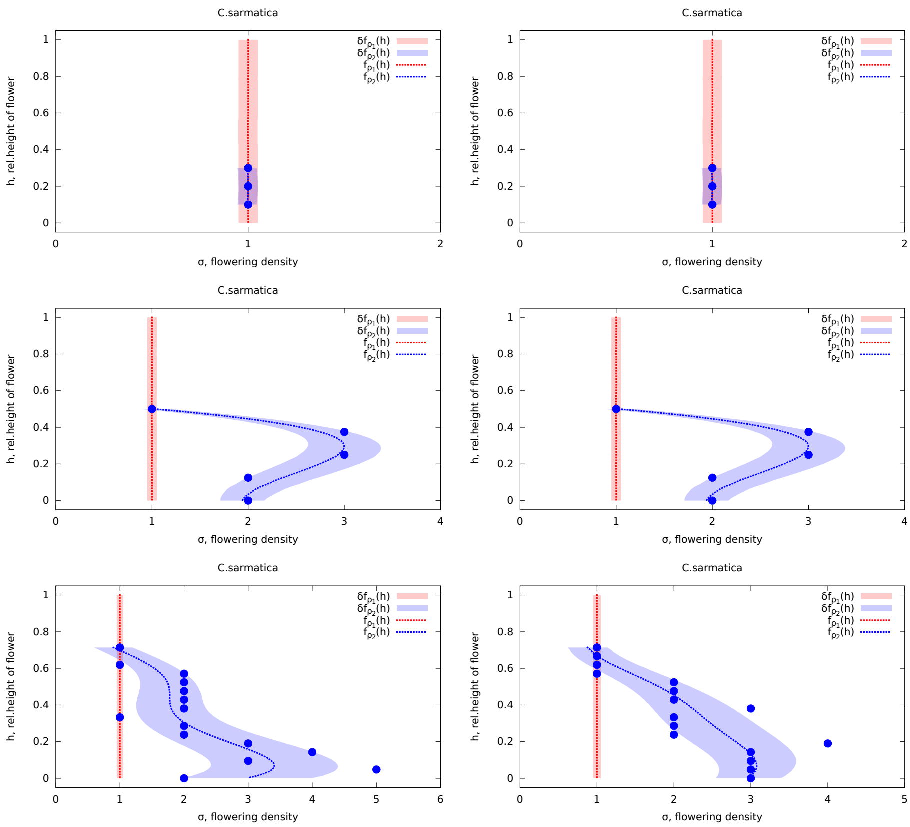

Figure 2: Flowering densities on 1^{st} and 2^{nd} order axes of *C. sarmatica* shoots. Here and in Fig. 3 the panels are arranged from top to bottom in the order: (i) shoots with few 2^{nd} order flowers; (ii) shoots with few 2^{nd} order axes;(iii) shoots with many 2^{nd} order axes. Left: accounting shoots; right: model shoots.

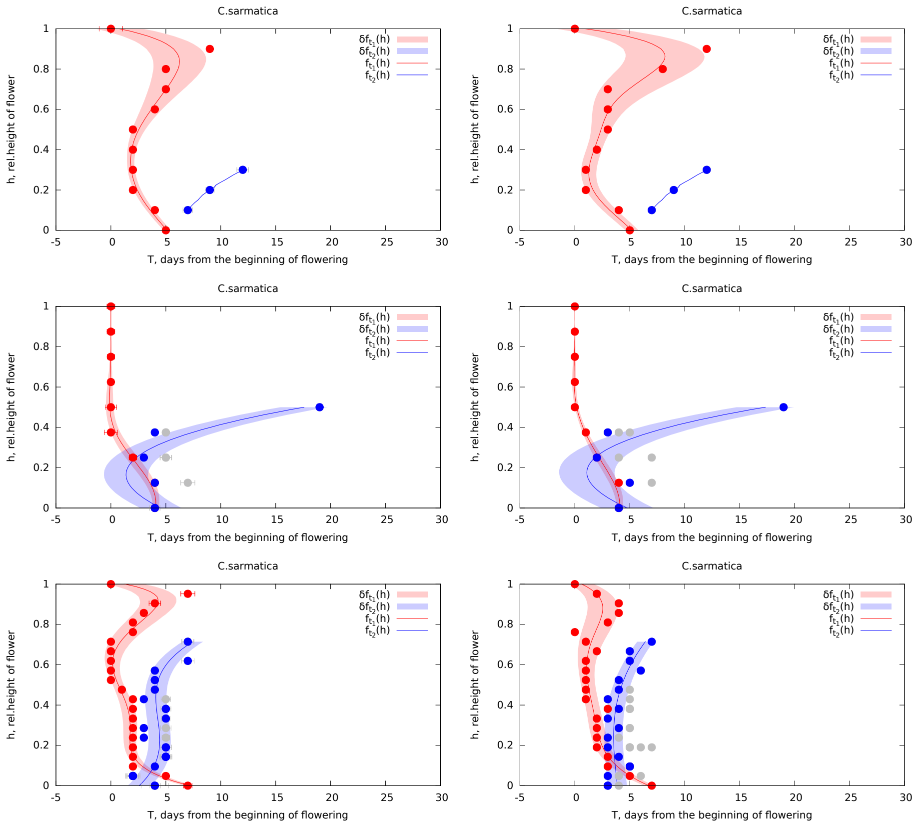

Figure 3: Relative start of flowering on 1^{st} $f_{t_1}(h)$ and 2^{nd} $f_{t_2}(h)$ order axes on *C. sarmatica* shoots. The flowering time for 1^{st} order flowers ft1 is reckoned from the opening of the first flower on the shoot, and for 2^{nd} order flowers, from the opening of the terminal flower on the corresponding axis. Left: accounting shoots; right: model shoots.

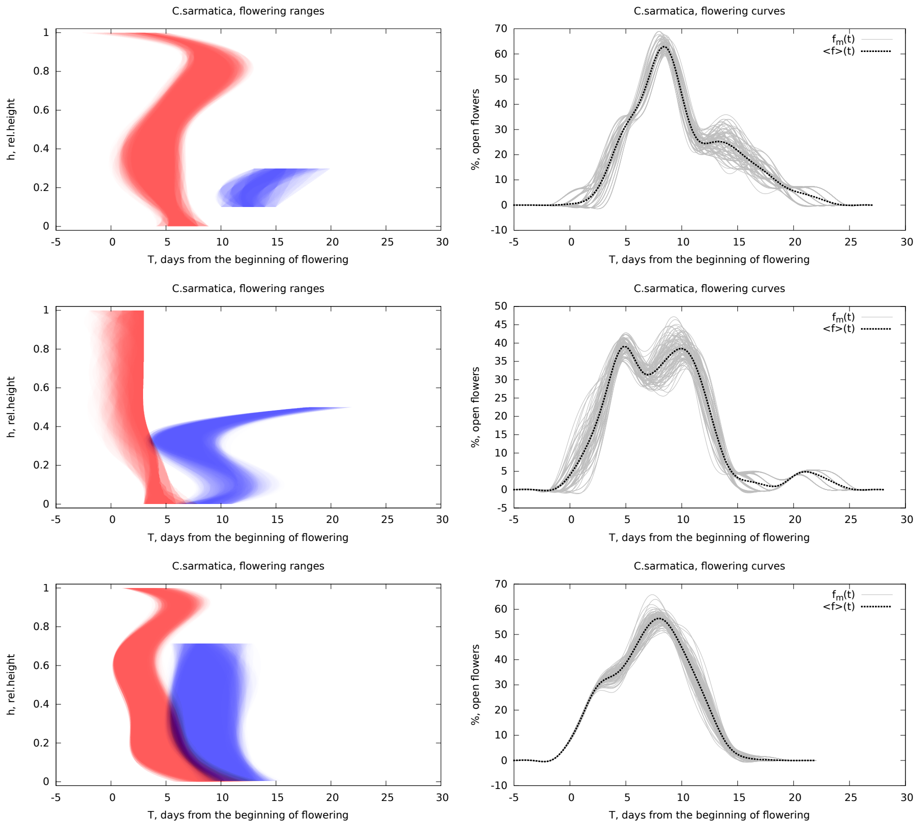

Figure 4: The sensitivity of the model to data restoration errors by the example of the same accounting shoots. The test included $N = 50$ restoration runs, in which missed data were randomly scattered over all allowed intervals (vs. the most likely dates as before) . The results of all runs are superimposed. Left: Flowering charts $D_i(h,t)$ for 1^{st} and 2^{nd} order axes. The charts are superimposed with the transparency coefficient $1/N = 0.02$. Right: Flowering curves $f_m(t)$ for every run and the flowering curve ¡f¿ averaged over all runs.

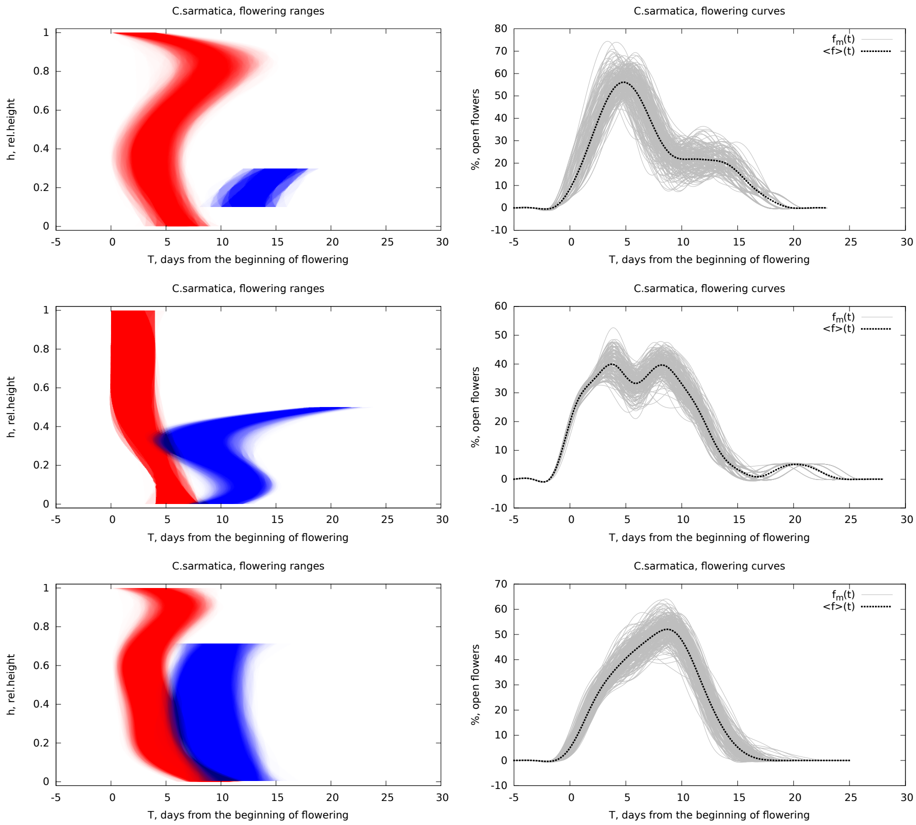

Figure 5: Results of 50 runs of solving the inverse problem $D' \leftarrow \{\psi_i, f_j\}$ for the same accounting shoots. A restriction was imposed: the numbers of 1^{st} and 2^{nd} order flowers in model shoots were the same as in accounting shoots. All the results obtained are superimposed. Left: Flowering charts $D_i(h,t)$ for 1^{st} and 2^{nd} order axes. The charts are superimposed with the transparency coefficient $1/N = 0.02$. Right: Flowering curves $f_m(t)$ for every run and the flowering curve ¡f¿ averaged over all runs.