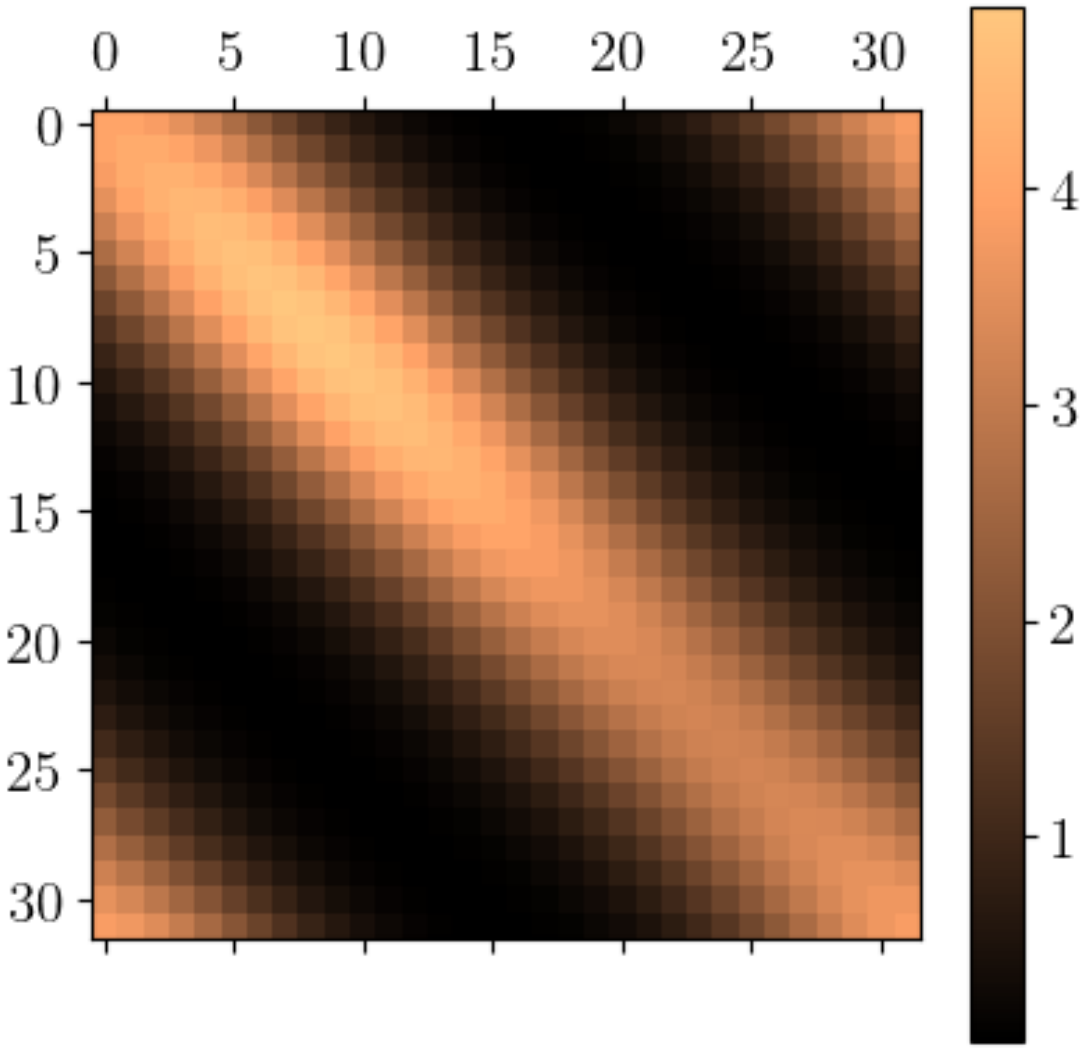
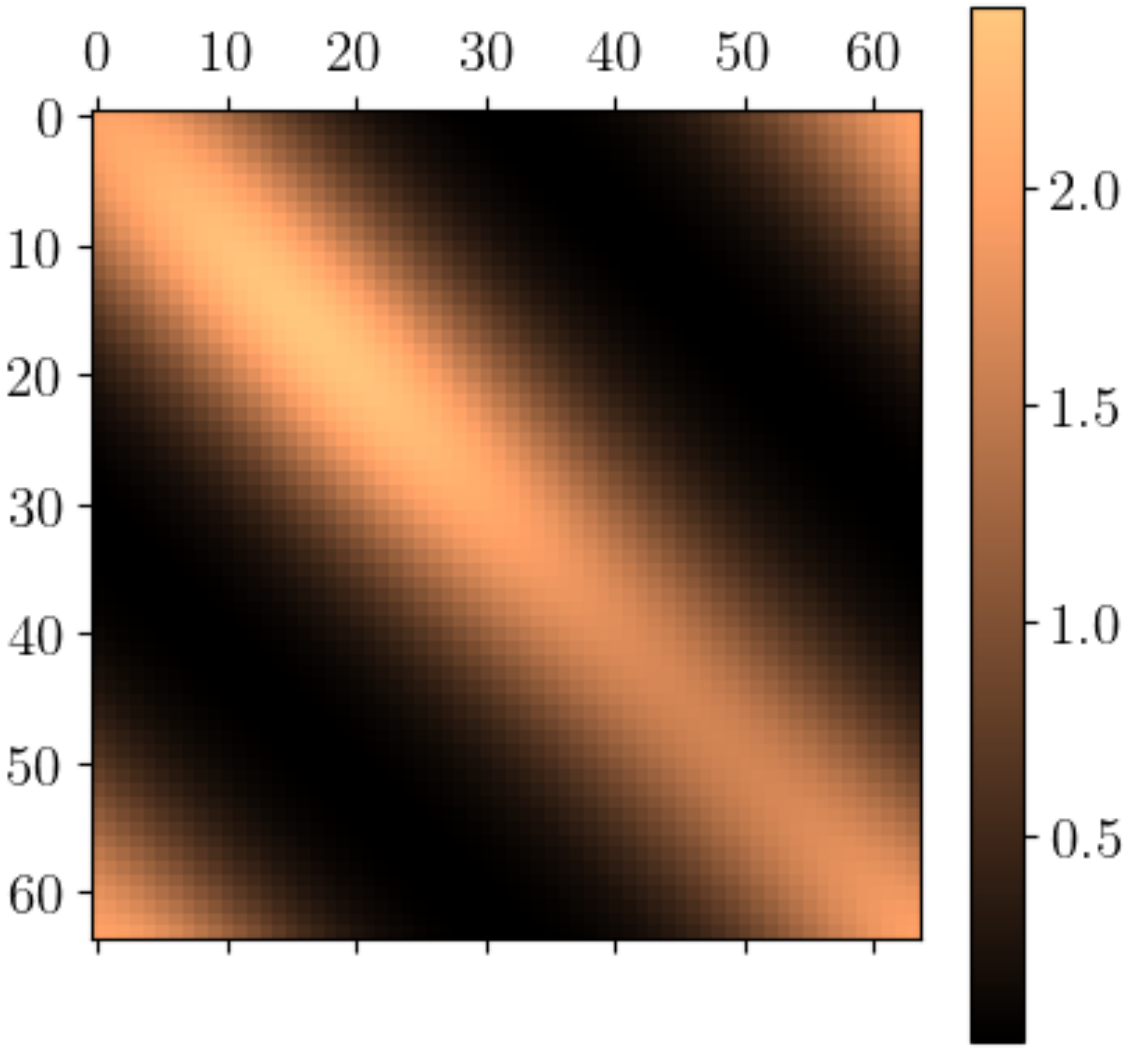
Problem solved

- J can have fully converged before the last inner iteration (this is not a plotting artefact).
- observation coordinates versus grid points (problem of the NaN values on the observation vector).
- J quadratic ?
  We plot : $J_{b,i} = \frac{1}{2}(u_i - \delta v_b)^2$.
  and $J_o = \frac{1}{2}(d - H\delta x_i)^T R^{-1}(d - H\delta x_i)$.

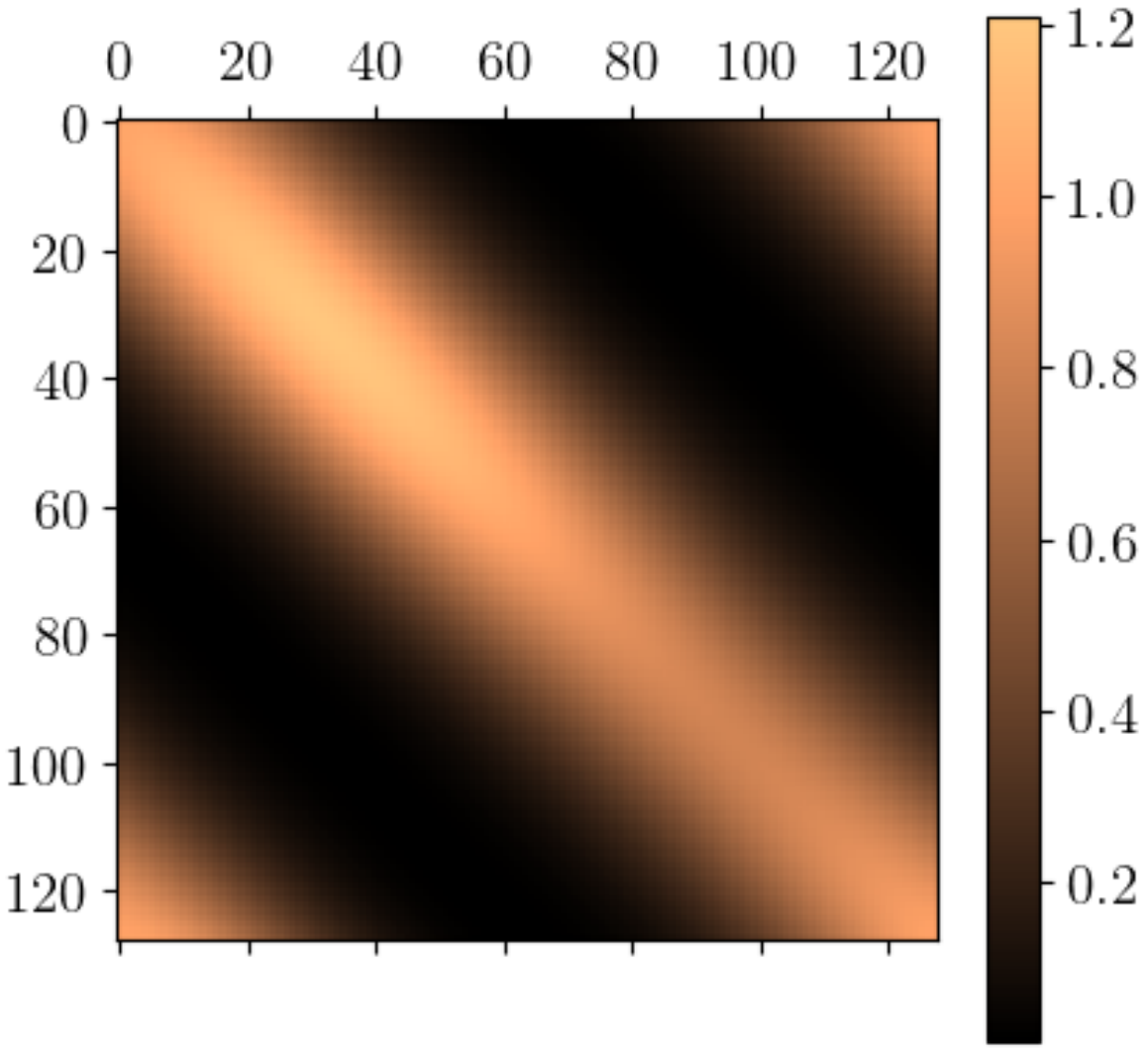
Monitoring the B Matrix, io=1



Monitoring the B Matrix, io=2

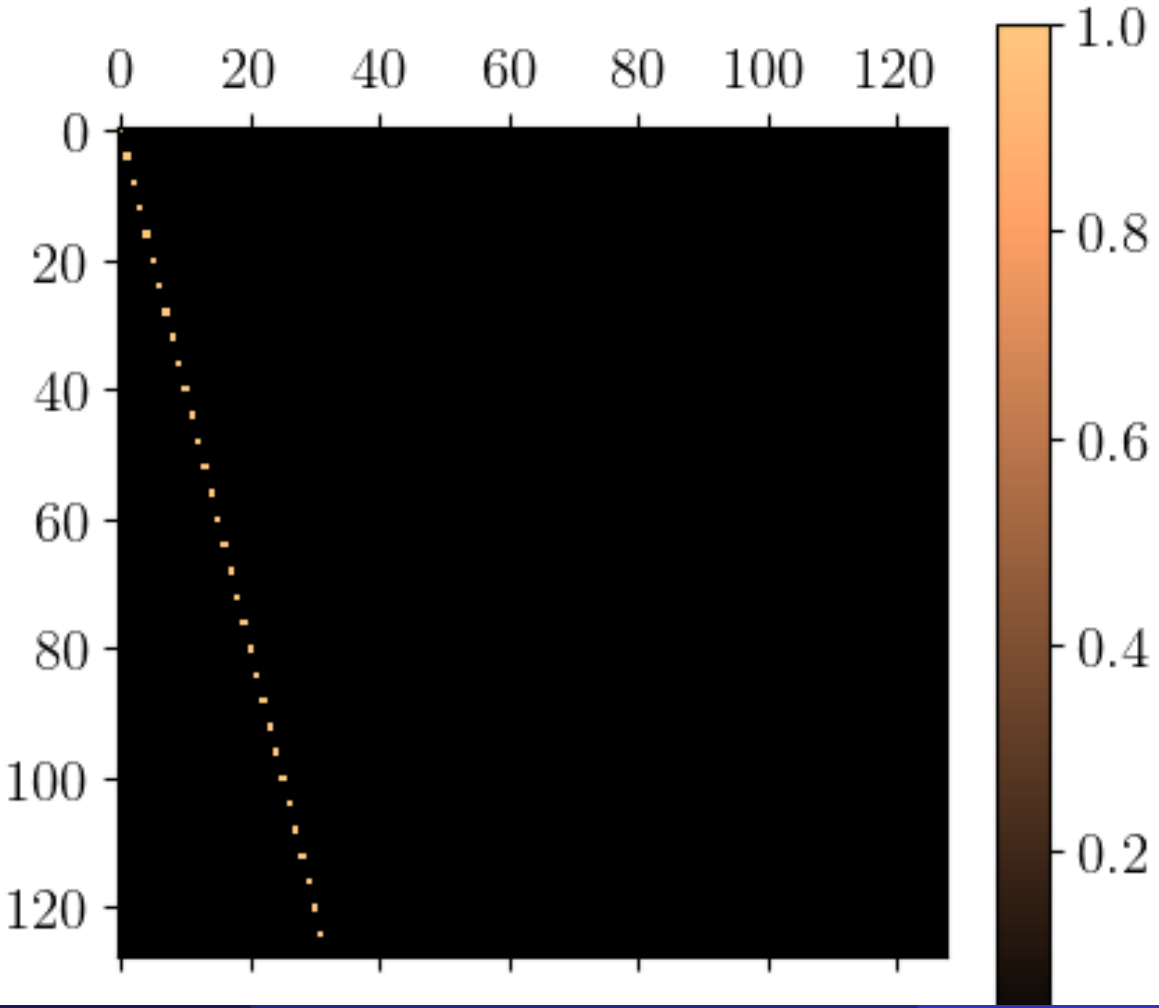


Monitoring the B Matrix, io=3



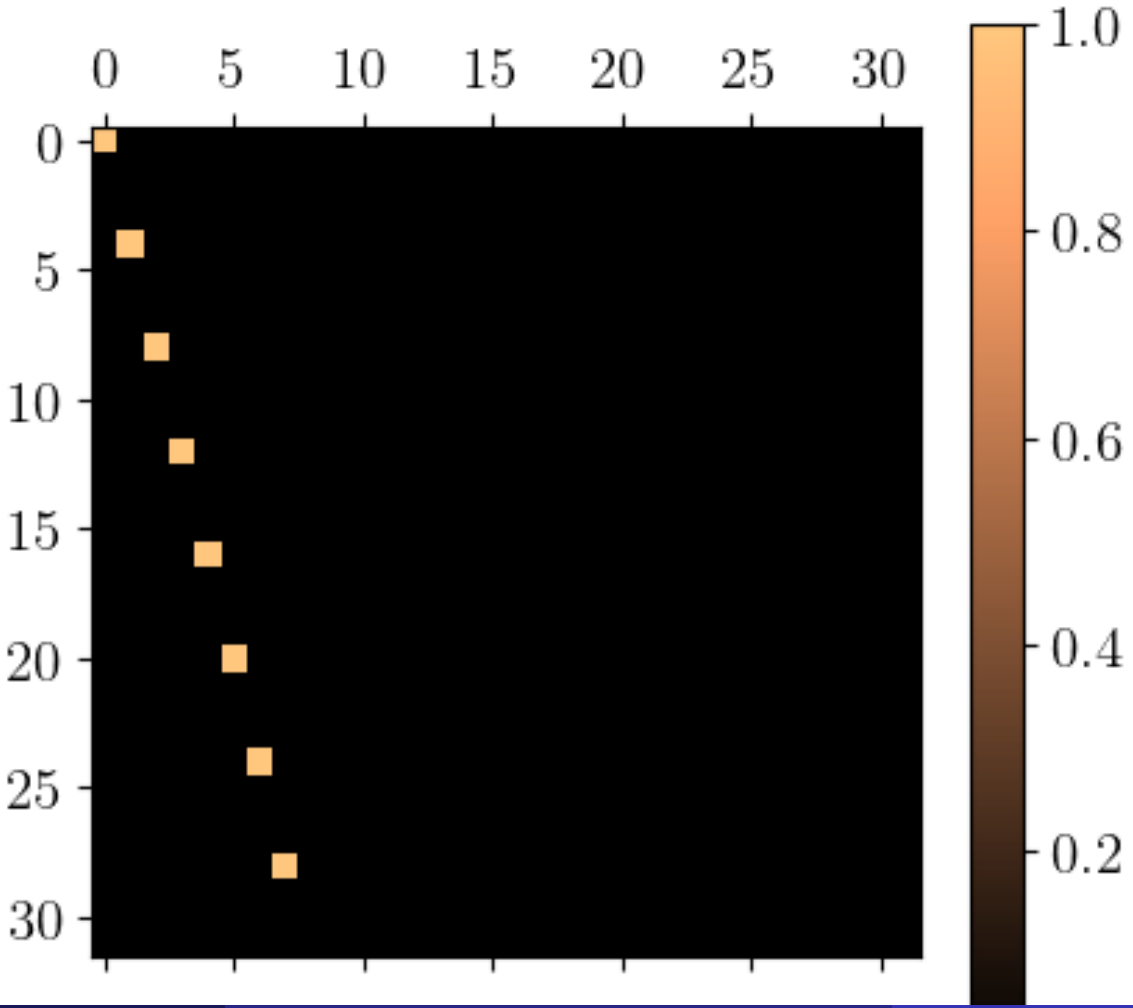
Monitoring the H Matrix, full resolution

$$obsdist = 4, \sigma^o = 0.1.$$



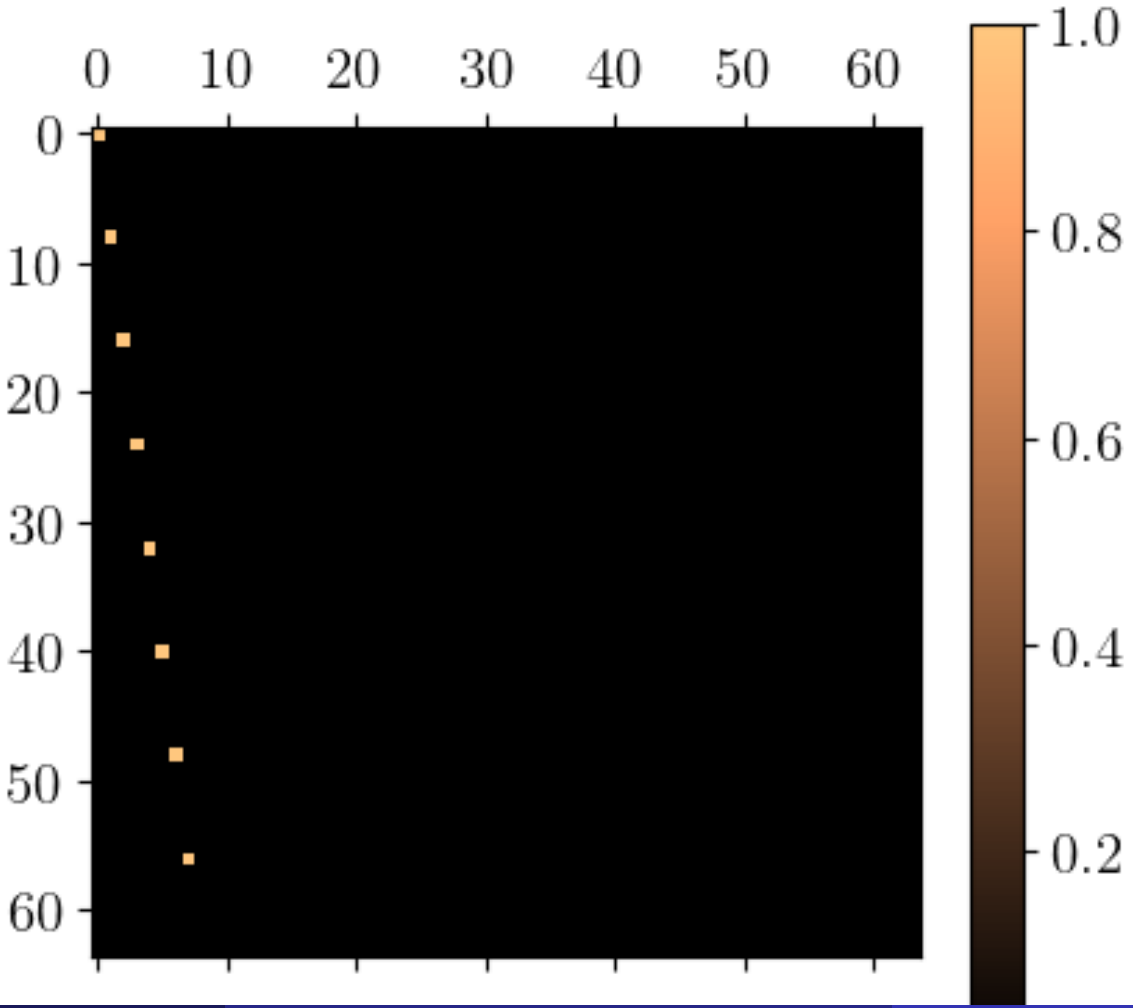
Monitoring the H Matrix, io=1

$$obsdist = 4, \sigma^o = 0.1.$$



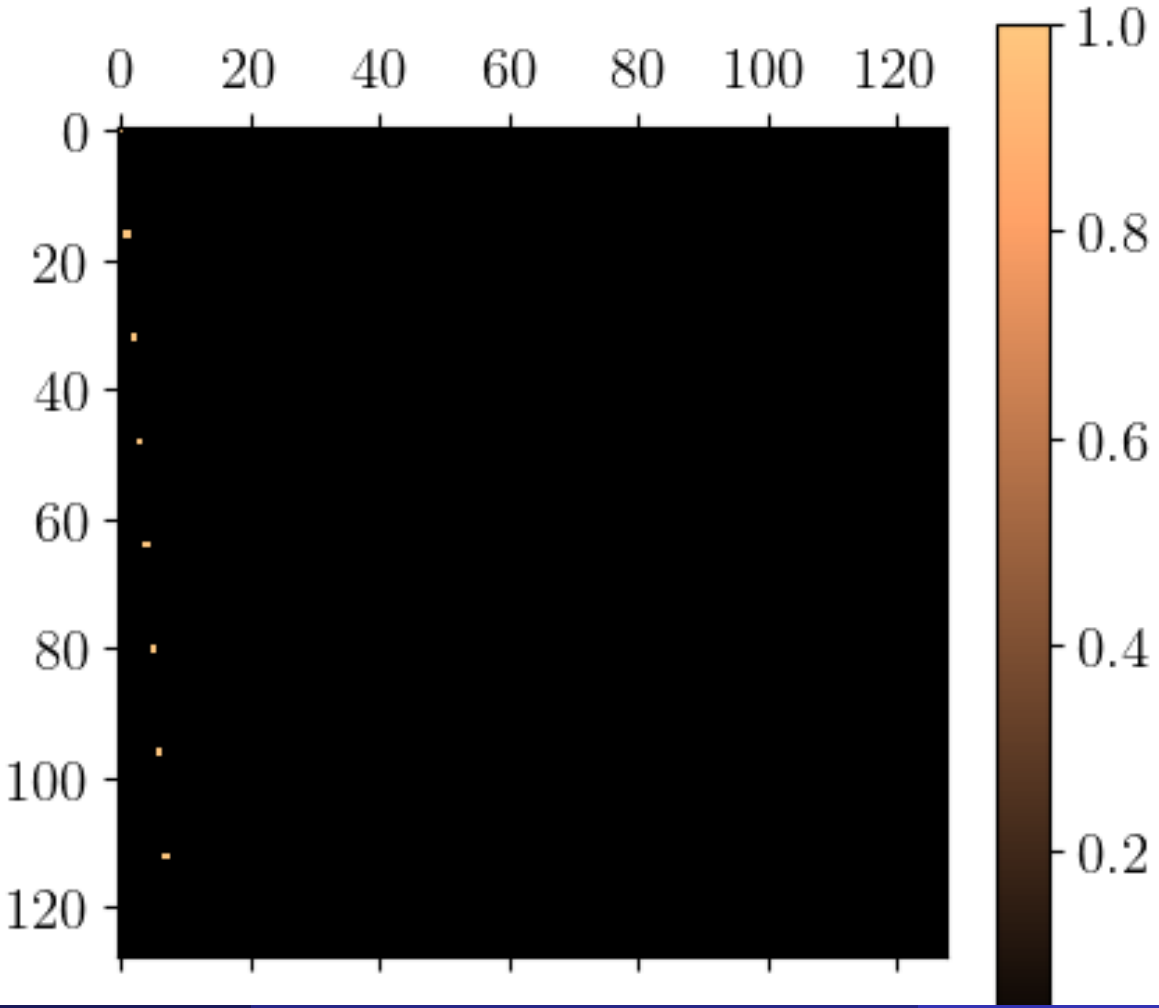
Monitoring the H Matrix, io=2

$$obsdist = 4, \sigma^o = 0.1.$$



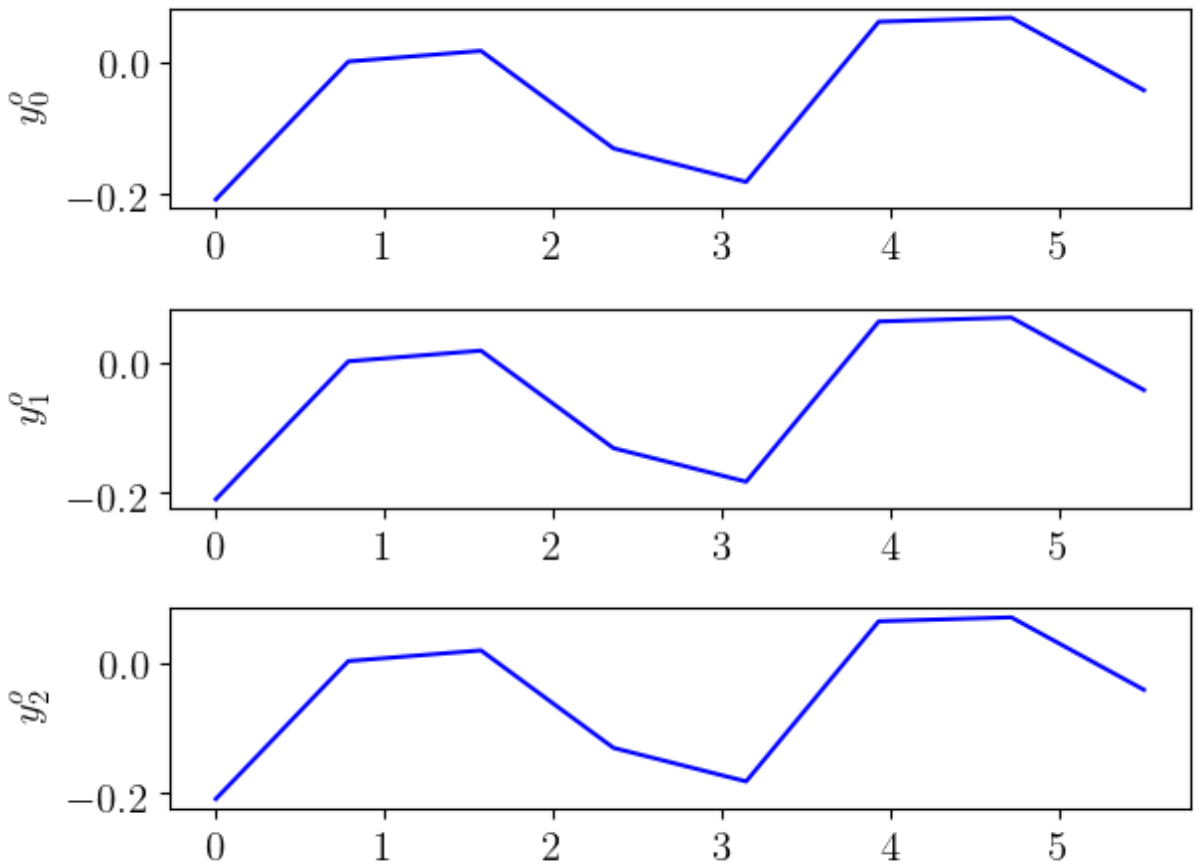
Monitoring the H Matrix, io=3

$$obsdist = 4, \sigma^o = 0.1.$$



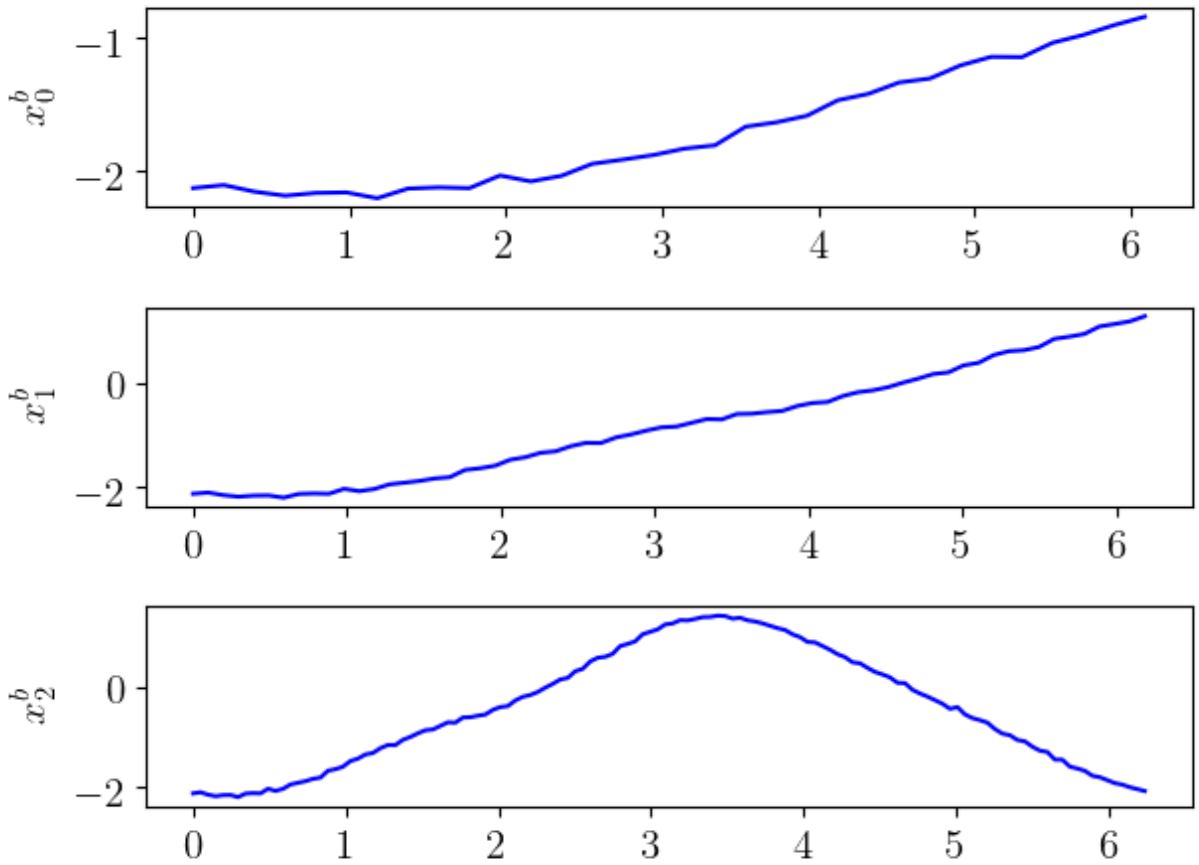
Monitoring the observations

$$obsdist = 4, \sigma^o = 0.1.$$

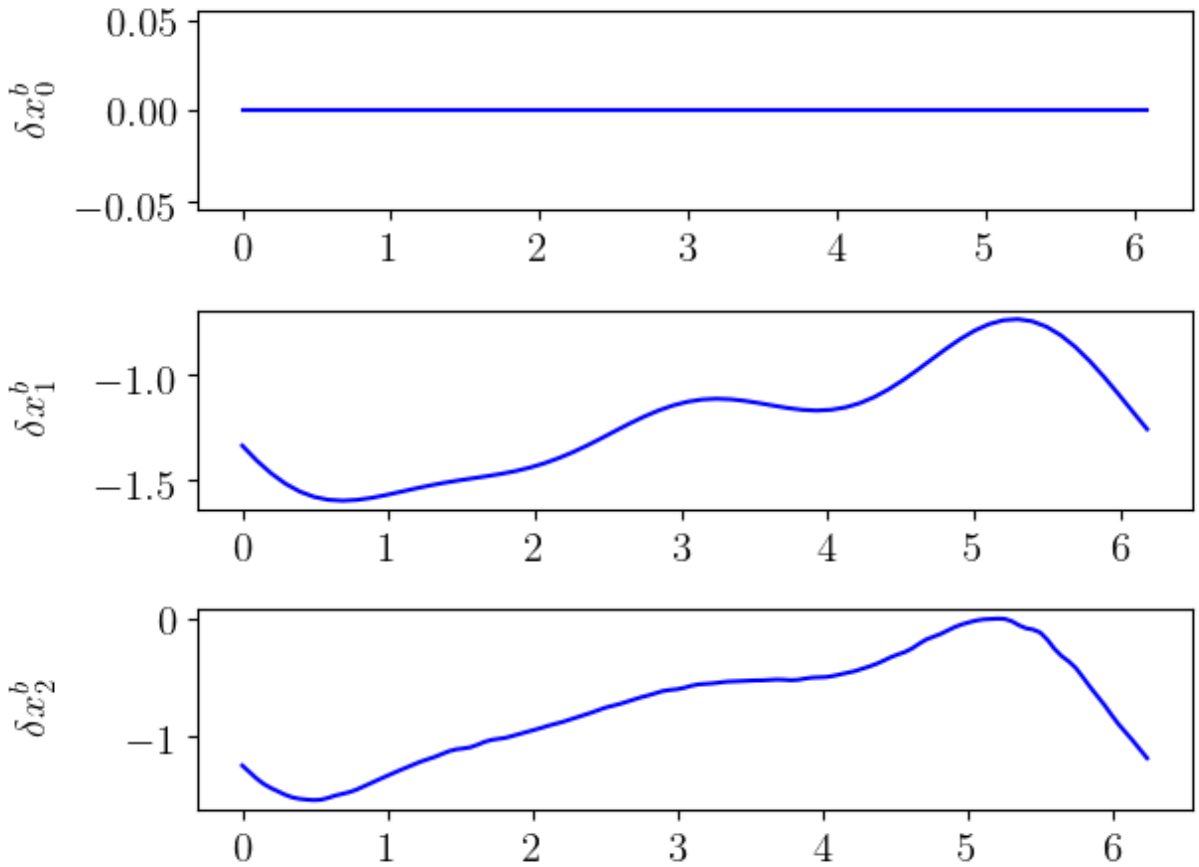


Monitoring the background (lanczos example), io=1

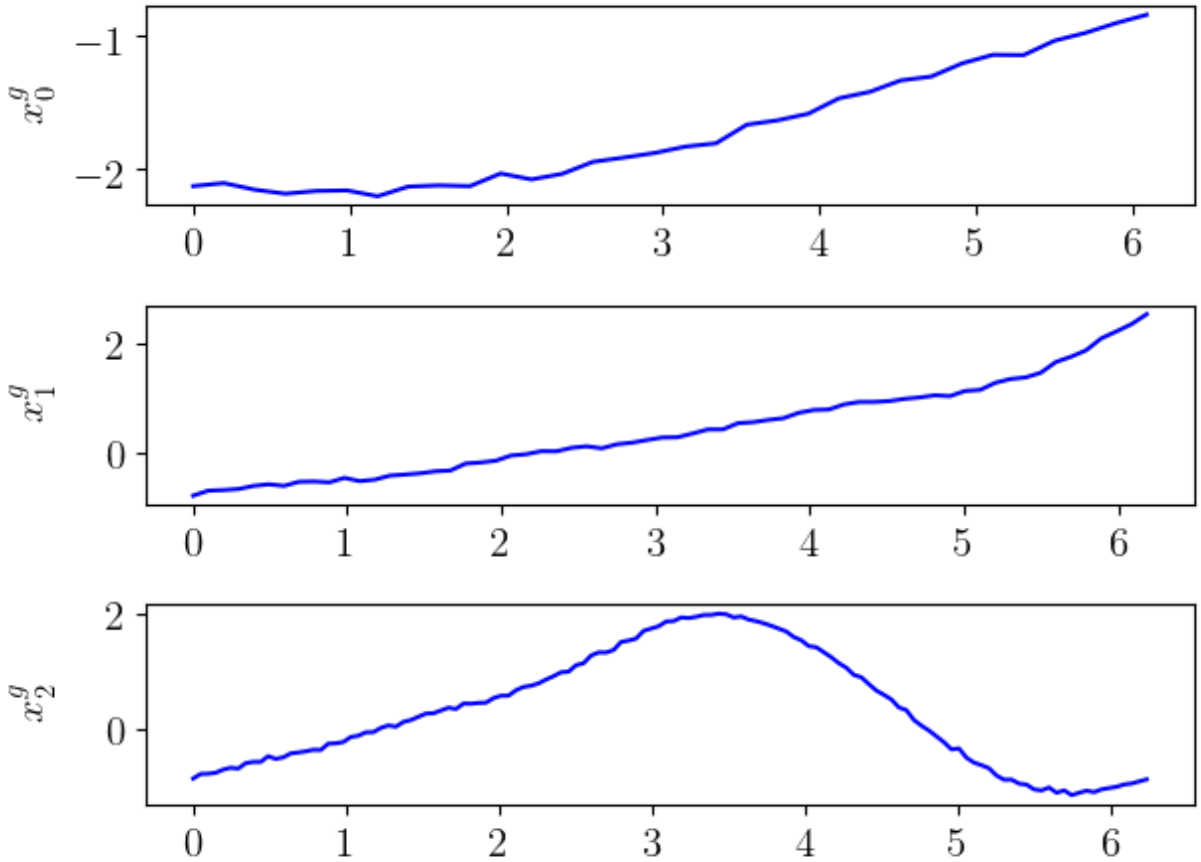
$$obsdist = 4, ni = 4, \sigma^o = \sigma^b_{var} = 0.1, L_b = 1.$$



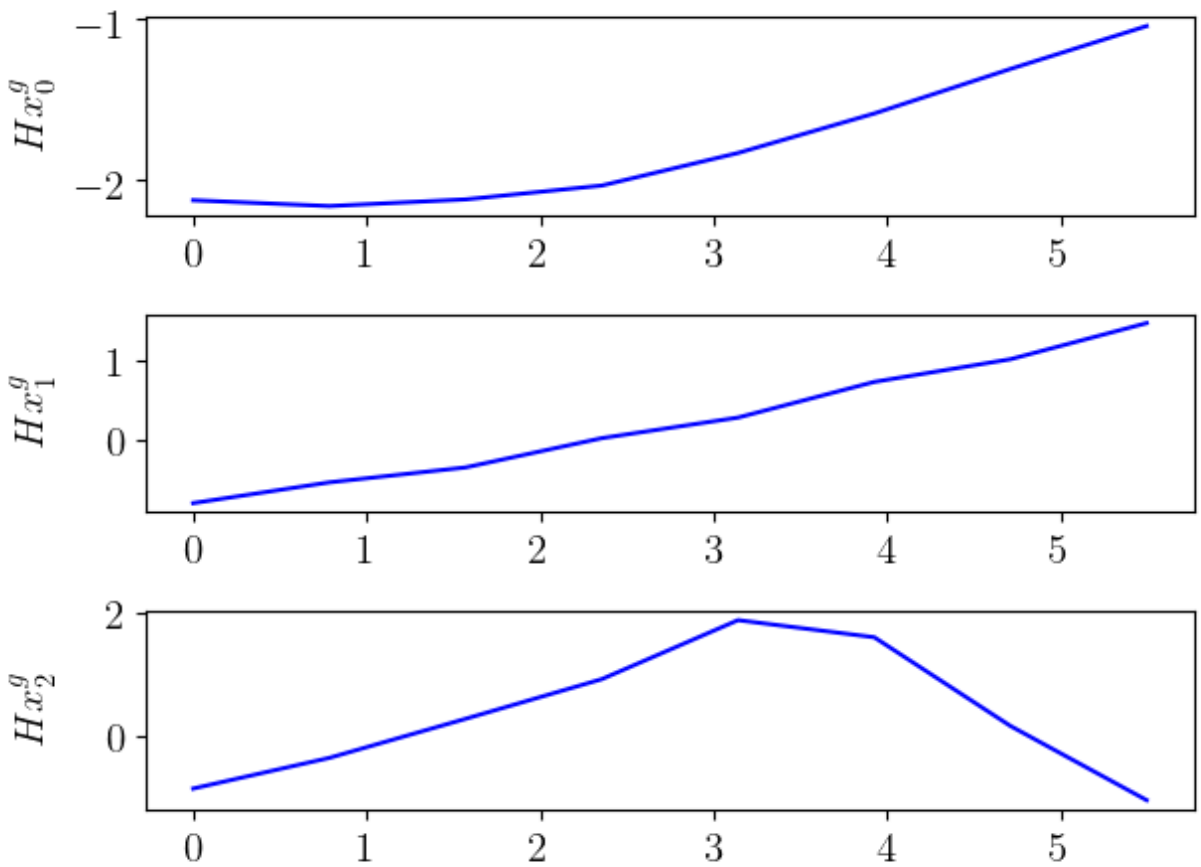
Monitoring the increment (lanczos example)



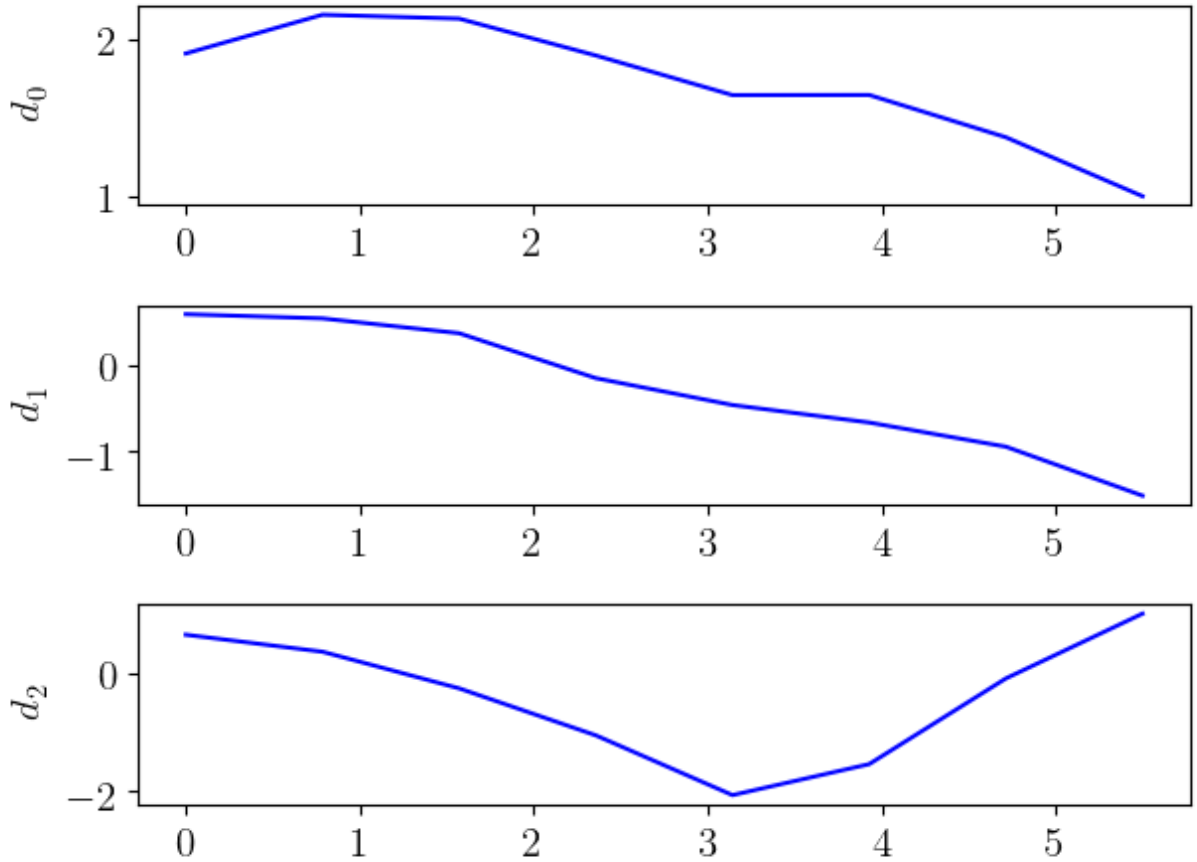
Monitoring the guess (lanczos example)



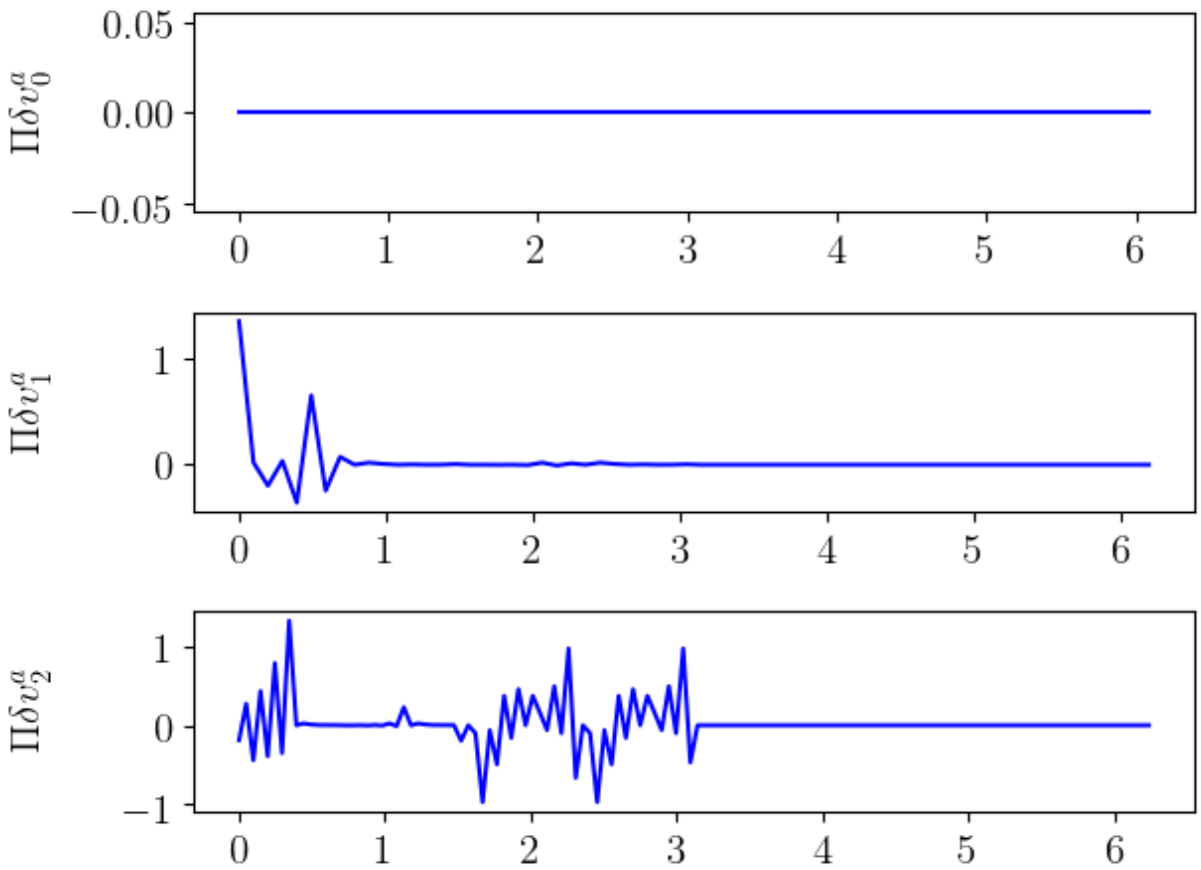
Monitoring Hx^g (lanczos example)



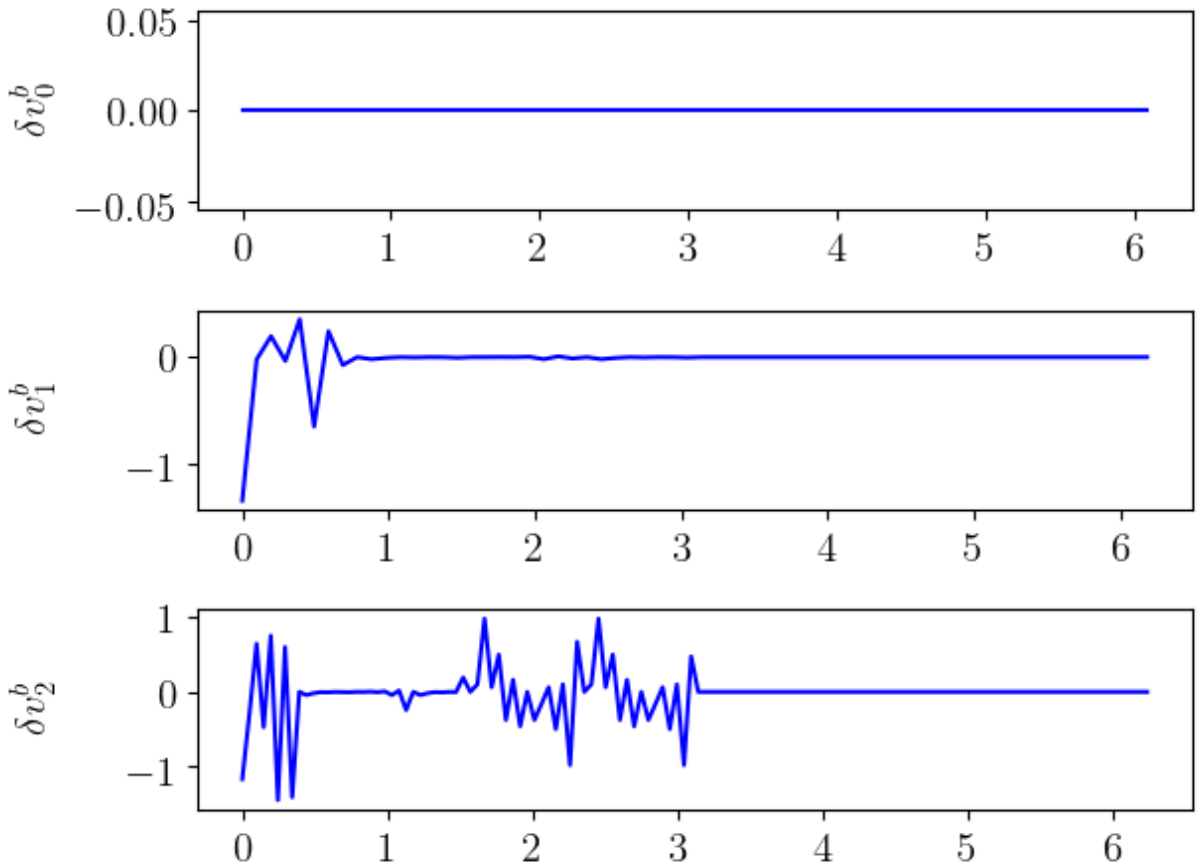
Monitoring the innovation



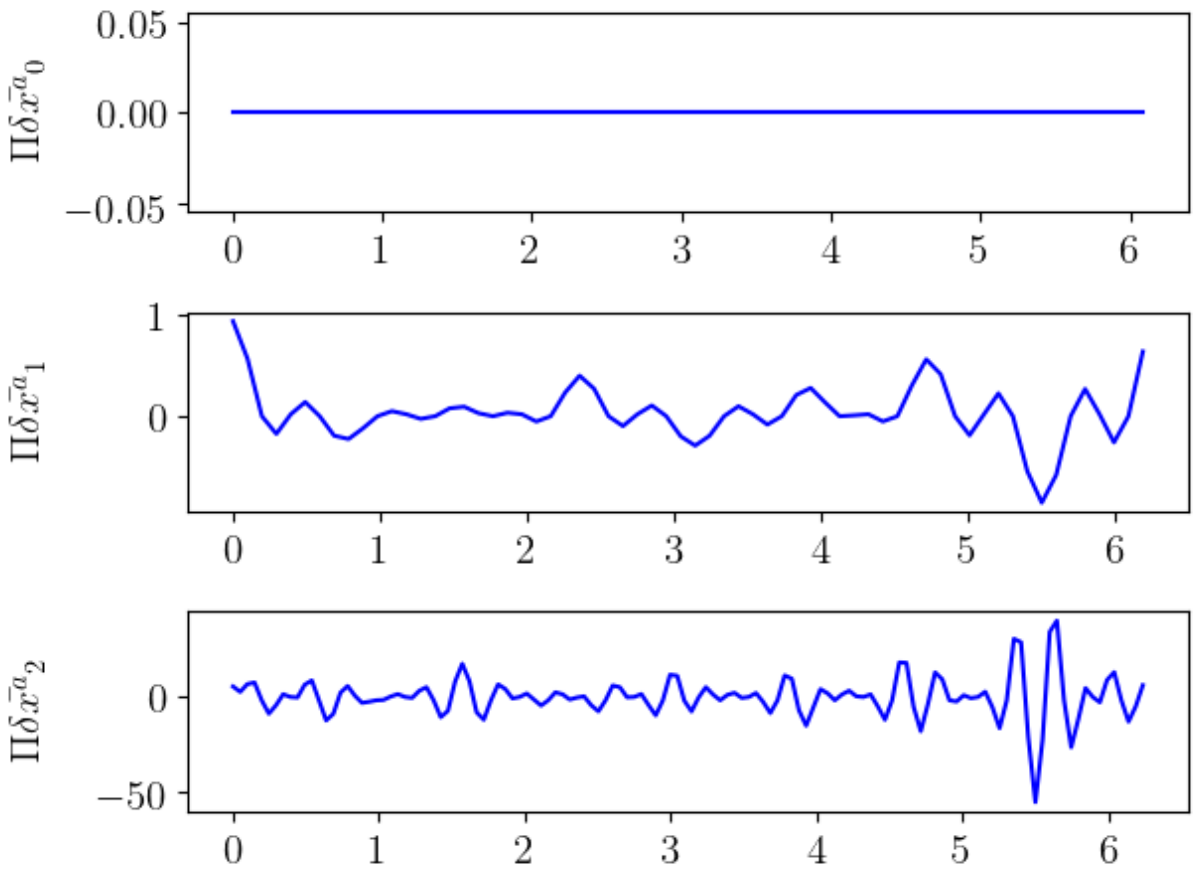
Monitoring the interpolated preconditionned analysis (lanczos)



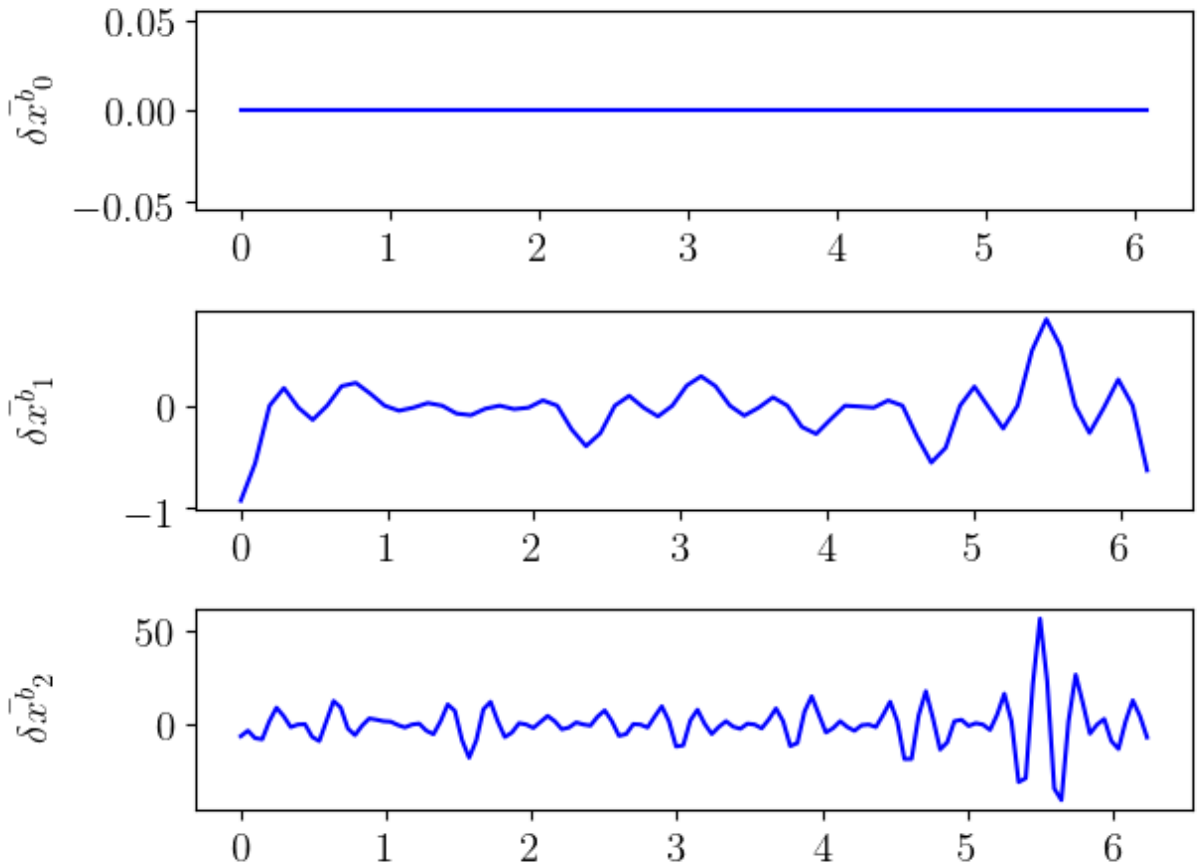
Monitoring the preconditionned increment (lanczos)



Monitoring the interpolated preconditionned analysis (PlanczosIF)



Monitoring the preconditionned increment (PlanczosIF)



Stop Criteria implemented at inner iteration i

- On $J_{b,i}/J_{b,i-1} < \epsilon_J$.
- On the norm of the preconditionned residue : $\beta_{i+1} < \epsilon_\beta$ (?).
- On the Ritz pairs approximation : $\frac{\|\beta_{i+1} s_{k,i}\|}{\lambda_k}, k = 1, .., i$.