

Assignment 4

1. MATLAB: Download the template file from the course homepage, [exercise04.tar](#).
2. Implement one step of the shifted QR algorithm in `qr_shift.m`. Use entry H_{nn} of the matrix as the shift.

Run `compare_methods` in MATLAB, and verify that the method works for a symmetric matrix. Remove the first `break` in `compare_methods` to try the method for a matrix with complex eigenvalues. What happens?

3. Implement a step of the Francis' double step QR algorithm in `qr_double_shift.m`.

Hint: In both cases, deflation is already implemented in the template. You only need to implement one QR-step.

Please submit your solution via e-mail to Peter Arbenz (arbenz@inf.ethz.ch) by March 20, 2018. (12:00). Please specify the tag **EWP18-4** in the subject field.