
- The programme `o.m` applies the singular value decomposition to the Bezout matrix $B(f, g)$ of the Bernstein basis polynomials $f = f(y)$ and $g = g(y)$ with $\theta = 1$, and the optimal value of θ computed by solving a linear programming problem.

To run the programme `o.m`, type

```
o(n,ec)
```

where

`n` is an integer that defines the polynomials $f(y)$ and $g(y)$ in the programme `ex.m`

`ec` is the ratio

$$\frac{\text{noise level}}{\text{signal level}}$$

measured in the componentwise sense.

Examples: Three examples of executing the programme `o.m` are

```
o(15,0), o(23,1e-8), o(30,1e-8)
```

□

The programme produces four graphs:

1. Figure 1 shows the column sums of $B(f, g)$ for $\theta = 1$.
2. Figure 2 shows the column sums of $B(f, g)$ for $\theta = \theta_0$, where θ_0 is the optimal value of θ.
3. Figure 3 shows the normalised singular values of $B(f, g)$ for $\theta = 1$.
4. Figure 4 shows the normalised singular values of $B(f, g)$ for $\theta = \theta_0$.

Note: The database `ex.m` is exactly the same as the database `ex.m` for the other programmes on Bernstein polynomials.