Deflation-based FastICA, where independent components (ICs) are extracted one-by-one, is among the most popular methods for estimating an unmixing matrix in the independent component analysis (ICA) model \( \mathbf{x} = \mathbf{W} \mathbf{s} + \mathbf{n} \). The method is usually given for a discrete random sample \( \mathbf{X} = (x_1, \ldots, x_n) \) and a nonlinearity function \( g = \mathcal{G} \) as the algorithm:

\[
\begin{align*}
    \mathbf{W}_{1} & = \mathbf{U}, \\
    \mathbf{U}_{j+1} & = \mathbf{U}_{j} \cdot \mathbf{S}_{j+1}, \\
    \mathbf{S}_{j+1} & = g^{-1}(\mathbf{W}_{j+1} \mathbf{U}_{j+1}), \\
    \mathbf{W}_{j+2} & = \mathbf{U}_{j+1} \mathbf{S}_{j+1}.
\end{align*}
\]

The order in which the sources are found by the deflation-based FastICA estimator depends on the sum of the variances of the off-diagonal elements of the FastICA estimator. Using Result 1 for the reloaded deflation-based FastICA we chose \( MD(\mathbf{W}, \mathbf{A}) \) as the initial estimate. In this simulation study we included the FastICA estimators using random initial values as well.

It is clear that the average \( MD \) of the reloaded FastICA corresponds to the minimum value among the six possible cases. Therefore, the reloaded FastICA behaves as expected and is basically equivalent with the best extraction order for that given nonlinearity.