

Note on the DDK filters:

In Kusche et al. 2009, only the DDK1 - DDK3 are explicitly listed with the given parameters (see Table 1 from Kusche et al. 2009).

Table 1 Smoothing characteristics of the three decorrelation filters used in this study

Decorrelation filter	Corresponding Gaussian radius (km)		Parameter a and p Acc. to Kusche (2007)
	Acc. to Kusche (2007, tables 1+2)	Acc. to $\omega_l = \frac{1}{2}$	
DDK1	1,350	530	$a = 1 \times 10^{14}$, $p = 4$
DDK2	900	340	$a = 1 \times 10^{13}$, $p = 4$
DDK3	660	240	$a = 1 \times 10^{12}$, $p = 4$

The parameter a is a weighting factor. By p we denote the exponential parameter in a power law of the type l^{-p} , fitted to the empirical signal degree variance [for details, cf. Kusche 2007, Eqs. (47) and (48)]

For DDK4 and higher, ICGEM uses the scale factors and powers as indicated below. For more explanation and experimental DDKs, users can refer to

<https://github.com/strawpants/GRACE-filter>.

Filter	Scale	Power
DDK8	5×10^9	4
DDK7	1×10^{10}	4
DDK6	5×10^{10}	4
DDK5	1×10^{11}	4
DDK4	5×10^{11}	4
DDK3	1×10^{12}	4
DDK2	1×10^{13}	4
DDK1	1×10^{14}	4

Reference:

Kusche, J., Schmidt, R., Petrovic, S., Rietbroek, R. Decorrelated GRACE time-variable gravity solutions by GFZ, and their validation using a hydrological model. *J Geod* **83**, 903–913 (2009). <https://doi.org/10.1007/s00190-009-0308-3>