

g and h examples

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This is a non-exhaustive table with previously reported model parameter values. Large parts of the table are copied from Lavery et al. (2007) and Lawson et al. (2004).

Some taxa are represented more than once, where multiple literature recordings have been found. It is recommended to thoroughly study the cited and other literature before using any of the presented values.

It should also be noted that L/a values might be fluctuating largely due to:

- geographical location (Køgeler et al. 1987; Lawson et al. 2004)
- life history traits of the taxon or seasonality (Lawson et al. 2004; Køgeler et al. 1987)

g and h in some species have been reported to fluctuate with:

- temperature (Chu and Wiebe 2005)
- size classes (Chu and Wiebe 2005; Lawson et al. 2004; Køgeler et al. 1987)
- depth (Chu and Wiebe 2005)
- seasonality (for example due to changes in lipid content) (Køgeler et al. 1987)
- state of the analysed individuals (preserved or alive) (Køgeler et al. 1987).

g and h are important variables in the model. It has been suggested that the effects of varying g and h can be of the same order of magnitude as the orientation (Stanton et al. 1993).

Taxon	Length-to-girth ratio $\frac{L}{a}$	Orientation	Density Contrast g	Sound Speed Contrast h	Scattering model
Euphausiids and Decapod Shrimp	10.5	N(20,20) (Benfield, Davis, and Gallagher 2000), average ~0 (Lawson et al. 2006)	$\frac{5.485 * L}{10^4} + 1.002; L > 25$ $1.016; L < 25$ (Lawson et al. 2004)	$\frac{5.94 * 2L}{10^4}; L > 25$ $1.019; L < 25$ (Lawson et al. 2004)	DWBA uniformly-bent cylinder
Larval Crustacean	2.55 (Lawson et al. 2004)	N(0,30) (Lawson et al. 2004)	1.058 (Lawson et al. 2004)	1.058 (Lawson et al. 2004)	DWBA uniformly-bent cylinder
Amphipods	3.00 (Lawson et al. 2004)	N(0,30) (Lawson et al. 2004)	1.058 (Lawson et al. 2004)	1.058 (Lawson et al. 2004)	DWBA uniformly-bent cylinder
Ostracods	2.55	N(0,30)	1.03 (pers. comm. Dezhang Chu in Lavery et al. 2007)	1.03 (pers. comm. Dezhang Chu in Lavery et al. 2007)	DWBA uniformly-bent cylinder
Chaetognaths and Polychaetes	17.15	N(0,30)	1.03 (pers. comm. Dezhang Chu in Lavery et al. 2007)	1.03 (pers. comm. Dezhang Chu in	DWBA uniformly-

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				Lavery et al. 2007)	bent cylinder
Gymnosome Pteropods (Clione)	1.83	N(0,30)	1.03 (pers. comm. Dezhang Chu in Lavery et al. 2007)	1.03 (pers. comm. Dezhang Chu in Lavery et al. 2007)	DWBA uniformly-bent cylinder
Salps	4	N(0,30)	1.004 (Stanton et al. 1994)	1.004 (Stanton et al. 1994)	DWBA uniformly-bent cylinder
Copepods	2.55	N(90,30)	1.02 (pers. comm. Dezhang Chu in Lavery et al. 2007)	1.058 (Chu, Wiebe, and Copley 2000)	DWBA prolate spheroid
Medusae	NA	NA	1.02 Lavery et al. (2007)	1.02 Lavery et al. (2007)	DWBA two prolate spheroid surfaces
Eggs	NA	NA	0.979 (Chu et al. 2003)	1.017 (Stanton 1989)	High-pass fluid sphere
Calanus finmarchicus	NA	NA	1.025 - 1.029 g/cm ³ depending on season (Køgeler et al. 1987)	1.027 (mixture C. finmarchicus and C. hyperboreus) (Køgeler et al. 1987)	NA
Calanus hyperboreus	NA	NA	1.022 - 1.036 g/cm ³ depending on season (Køgeler et al. 1987)	1.027 (mixture C. finmarchicus and C. hyperboreus) (Køgeler et al. 1987)	NA
Acartia clausi	NA	NA	1.04 g/cm ³ (Greenlaw 1979)	NA	NA
Calanus marshallae	NA	NA	1.04 g/cm ³ (Greenlaw 1979)	1.007 (Køgeler et al. 1987)	NA
Meganyctiphanes norvegica	NA	NA	1.057 g/cm ³ (Kils 1981)	1.030 (Køgeler et al. 1987)	NA
Thysanoessa	NA	NA	1.052 - 1.074 g/cm ³ depending on season and species (Køgeler et al. 1987)	1.026 (Køgeler et al. 1987)	NA
Calanus	NA	NA	1.022 - 1.036 g/cm ³ depending on season and species (Køgeler et al. 1987)	1.027 (Køgeler et al. 1987); 0.949 & 1.013 - Depth dependent (Chu and Wiebe 2005)	NA
General	NA	NA	0.9402 - 1.051 (Chu and Wiebe 2005)	0.949 - 1.096 (Chu and Wiebe 2005)	NA

Taxon	Length-to-girth ratio $\frac{L}{a}$	Orientation	Density Contrast g	Sound Speed Contrast h	Scattering model
Euphausia superba	NA	NA	1.0241 (Chu and Wiebe 2005), 1.0357 (Foote 1990)	1.031 (Chu and Wiebe 2005), 1.0279 (Foote 1990)	NA
Euphausia crystallorophias	NA	NA	1.009 & 1.000 depth dependent (Chu and Wiebe 2005)	1.025 & 1.029 depth dependent (Chu and Wiebe 2005)	NA
Neocalanus cristatus	NA	NA	0.997 - 1.009 (Matsukura et al. 2009)	1.013 - 1.025 (Matsukura et al. 2009)	DWBA Deformed Cylinder
Neocalanus plumchrus	NA	NA	0.995 - 1.009 (Matsukura et al. 2009)	1.006 - 1.021 (Matsukura et al. 2009)	DWBA Deformed Cylinder
Ammodytes personatus (juvenile)	NA	NA	1.021 (Yasuma et al. 2009)	1.02 (Yasuma et al. 2009)	NA
Ammodytes personatus (adult)	NA	NA	1.032 (Yasuma et al. 2009)	1.02 (Yasuma et al. 2009)	NA
Salpa thompsoni	10	Uniform [0, π]	1 - 1.0039 (Wiebe et al. 2009)	1.006 - 1.0201 (Wiebe et al. 2009)	DWBA

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