$$data := READEXCEL(\text{“.\textbackslash part 2.xlsx”}, \text{“Sheet1!A6:B60”}) = \begin{bmatrix} 0.6664 & 261.1515 \\ 0.6675 & 292.8182 \\ 0.6874 & 261.7273 \\ 0.6886 & 292.2424 \\ 0.71 & 262.303 \\ 0.7112 & 291.6667 \\ 0.7342 & 262.8788 \\ 0.7356 & 291.0909 \\ 0.7603 & 263.4546 \\ 0.7617 & 290.5152 \\ 0.7882 & 264.0303 \\ 0.7898 & 289.9394 \\ & \vdots \end{bmatrix}$$

$$a := data^{\langle 0 \rangle} \qquad \lambda := data^{\langle 1 \rangle}$$

$$a = \begin{bmatrix} 0.6664 \\ 0.6675 \\ 0.6874 \\ 0.6886 \\ 0.71 \\ 0.7112 \\ 0.7342 \\ 0.7356 \\ 0.7603 \\ 0.7617 \\ 0.7882 \\ 0.7898 \\ \vdots \end{bmatrix} \qquad \lambda = \begin{bmatrix} 261.1515 \\ 292.8182 \\ 261.7273 \\ 292.2424 \\ 262.303 \\ 291.6667 \\ 262.8788 \\ 291.0909 \\ 263.4546 \\ 290.5152 \\ 264.0303 \\ 289.9394 \\ \vdots \end{bmatrix}$$

$$\omega := \frac{\left(2 \cdot \pi \cdot 3 \cdot 10^{17}\right)}{\lambda}$$

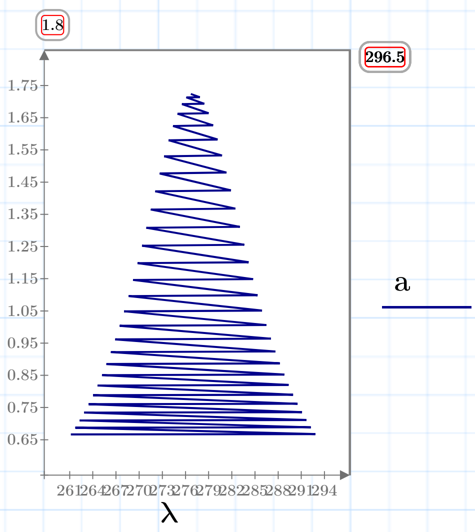
$$\lambda 1 := \frac{\left(2 \cdot \pi \cdot 3 \cdot 10^{17}\right)}{\omega}$$

$$\alpha := a \cdot \frac{(2.303)}{1.88 \cdot 10^{-7}}$$

$$min(a) = 0.6664$$

$$max(a) = 1.7238$$

$$i := 1 \,..\, rows(a)$$



$$\overrightarrow{\omega} = \begin{bmatrix} 7.22 \cdot 10^{15} \\ 6.44 \cdot 10^{15} \\ 7.2 \cdot 10^{15} \\ 6.45 \cdot 10^{15} \\ 7.19 \cdot 10^{15} \\ 6.46 \cdot 10^{15} \\ 7.17 \cdot 10^{15} \\ 6.48 \cdot 10^{15} \\ 7.15 \cdot 10^{15} \\ 6.49 \cdot 10^{15} \\ 7.14 \cdot 10^{15} \\ 6.5 \cdot 10^{15} \\ \vdots \end{bmatrix} \qquad \overrightarrow{\alpha} = \begin{bmatrix} 8.1634 \cdot 10^{6} \\ 8.1765 \cdot 10^{6} \\ 8.4209 \cdot 10^{6} \\ 8.4349 \cdot 10^{6} \\ 8.6973 \cdot 10^{6} \\ 8.7124 \cdot 10^{6} \\ 8.9943 \cdot 10^{6} \\ 9.0105 \cdot 10^{6} \\ 9.3133 \cdot 10^{6} \\ 9.3307 \cdot 10^{6} \\ 9.6559 \cdot 10^{6} \\ 9.6747 \cdot 10^{6} \\ \vdots \end{bmatrix}$$

$$max(\omega) = 7.2179 \cdot 10^{15} \qquad max(\alpha) = 2.1117 \cdot 10^{7}$$

$$min(\omega) = 6.4373 \cdot 10^{15} \qquad min(\alpha) = 8.1634 \cdot 10^{6}$$

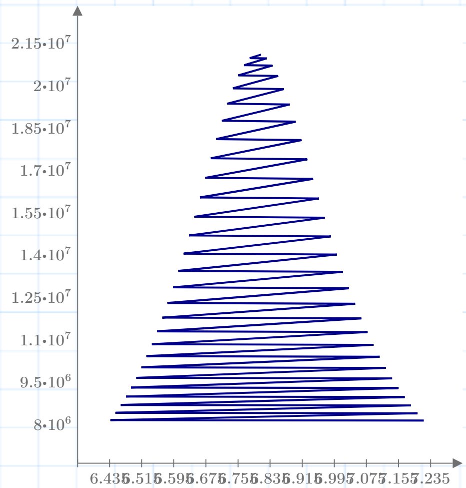
$$x := \text{cspline}(\alpha, \omega)$$

$$r1 := \max(\omega) - 0.0135 \cdot 10^{15}$$

$$r2 := \min(\omega) + 0.0135 \cdot 10^{15}$$

$$r1 = 7.2044 \cdot 10^{15}$$

$$r2 = 6.4508 \cdot 10^{15}$$

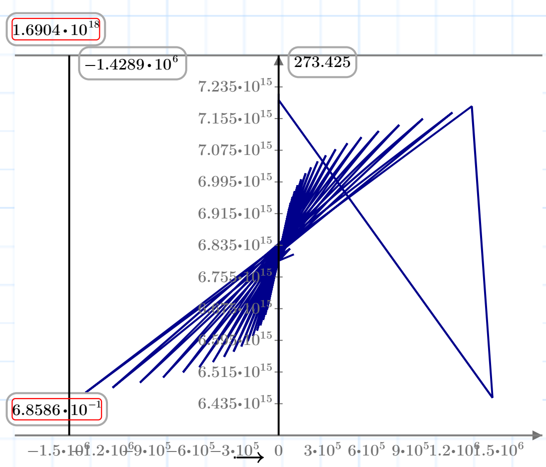


$$\frac{\omega}{10^{15}}$$

$$\omega1 := r2, \left(r2 + \left(0.0135 \cdot 10^{15}\right)\right) .. r1$$

$$\omega1 = \begin{bmatrix} 6.4508 \cdot 10^{15} \\ 6.4643 \cdot 10^{15} \\ 6.4778 \cdot 10^{15} \\ 6.4913 \cdot 10^{15} \\ 6.5048 \cdot 10^{15} \\ 6.5183 \cdot 10^{15} \\ 6.5318 \cdot 10^{15} \\ 6.5453 \cdot 10^{15} \\ 6.5588 \cdot 10^{15} \\ 6.5723 \cdot 10^{15} \\ 6.5858 \cdot 10^{15} \\ 6.5993 \cdot 10^{15} \\ \vdots \end{bmatrix} \quad \overrightarrow{\lambda1} = \begin{bmatrix} 261.1515 \\ 292.8182 \\ 261.7273 \\ 292.2424 \\ 262.303 \\ 291.6667 \\ 262.8788 \\ 291.0909 \\ 263.4546 \\ 290.5152 \\ 264.0303 \\ 289.9394 \\ \vdots \end{bmatrix}$$

$$\vec{x} = \begin{bmatrix} 0 \\ 3 \\ 2 \\ 1.46 \cdot 10^{6} \\ 1.32 \cdot 10^{6} \\ -1.32 \cdot 10^{6} \\ 1.19 \cdot 10^{6} \\ -1.13 \cdot 10^{6} \\ 9.84 \cdot 10^{5} \\ -9.45 \cdot 10^{5} \\ 8.23 \cdot 10^{5} \\ -7.88 \cdot 10^{5} \\ \vdots \end{bmatrix} \quad \vec{\omega} = \begin{bmatrix} 7.2179 \cdot 10^{15} \\ 6.4373 \cdot 10^{15} \\ 7.202 \cdot 10^{15} \\ 6.45 \cdot 10^{15} \\ 7.1862 \cdot 10^{15} \\ 6.4627 \cdot 10^{15} \\ 7.1704 \cdot 10^{15} \\ 6.4755 \cdot 10^{15} \\ 7.1548 \cdot 10^{15} \\ 6.4883 \cdot 10^{15} \\ 7.1392 \cdot 10^{15} \\ 6.5012 \cdot 10^{15} \\ \vdots \end{bmatrix}$$



$$\vec{x} \qquad \vec{\omega}$$

$$\Delta\alpha(\alpha 1) := \mathrm{interp}(x, \alpha, \omega, \alpha 1)$$

$$\alpha 1 := \mathrm{submatrix}(\alpha, 0, 20, 0, 0)$$

$$\overrightarrow{\alpha 1} = \begin{bmatrix} 8.1634 \cdot 10^{6} \\ 8.1765 \cdot 10^{6} \\ 8.4209 \cdot 10^{6} \\ 8.4349 \cdot 10^{6} \\ 8.6973 \cdot 10^{6} \\ 8.7124 \cdot 10^{6} \\ 8.9943 \cdot 10^{6} \\ 9.0105 \cdot 10^{6} \\ 9.3133 \cdot 10^{6} \\ 9.3307 \cdot 10^{6} \\ 9.6559 \cdot 10^{6} \\ 9.6747 \cdot 10^{6} \\ \vdots \end{bmatrix} \quad \overrightarrow{\Delta\alpha(\alpha)} = \begin{bmatrix} \vdots \\ 6.4883 \cdot 10^{15} \\ 7.1392 \cdot 10^{15} \\ 6.5012 \cdot 10^{15} \\ 7.1236 \cdot 10^{15} \\ 6.5141 \cdot 10^{15} \\ 7.1082 \cdot 10^{15} \\ 6.5271 \cdot 10^{15} \\ 7.0928 \cdot 10^{15} \\ 6.5402 \cdot 10^{15} \\ 7.0774 \cdot 10^{15} \\ 6.5533 \cdot 10^{15} \\ 7.0622 \cdot 10^{15} \\ \vdots \end{bmatrix}$$

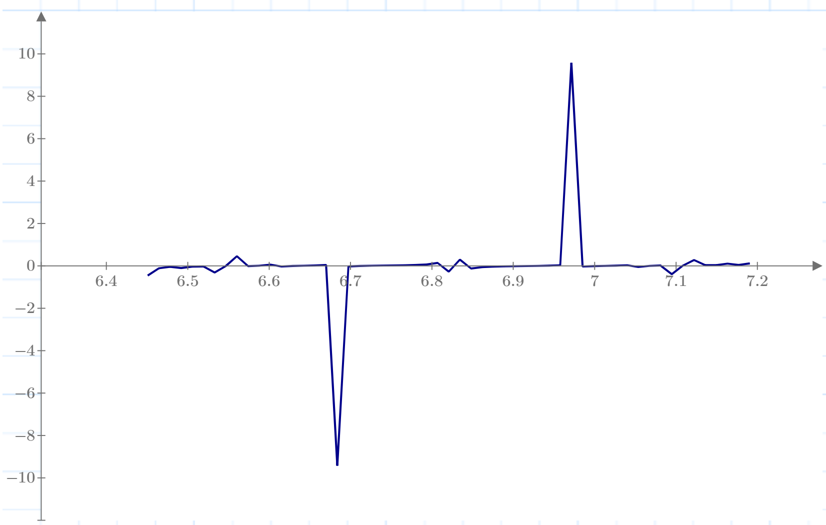
$$\Delta n(\omega 1) := \left(\left[3 \cdot \frac{10^{10}}{\pi}\right]\right) \left[\int_{r2}^{\overrightarrow{\omega 1} + 0.0135 \cdot 10^{15}} \left(\frac{\overrightarrow{\Delta\alpha(\alpha 1)}}{\overrightarrow{\omega}^{2} - \overrightarrow{\omega 1}^{2}} \right) d\omega + \int_{\overrightarrow{\omega 1} - 0.0135 \cdot 10^{15}}^{r1} \left(\frac{\overrightarrow{\Delta\alpha(\alpha 1)}}{\overrightarrow{\omega}^{2} - \overrightarrow{\omega 1}^{2}} \right) d\omega \right]$$

$$\overrightarrow{\Delta n(\omega 1)} = ?$$

$i := 0 .. \text{last}(\alpha)$ $\qquad \omega1_i := r2 + i \cdot \dfrac{r1 - r2}{\text{rows}(\alpha)}$

$$\Delta n(\omega1) := 3 \cdot \frac{10^{10}}{\pi} \left(\int_{r2}^{\omega1 + 0.0135 \cdot 10^{15}} \frac{1}{\omega^2 - \omega1^2} \, d\omega + \int_{\omega1 - 0.0135 \cdot 10^{15}}^{r1} \frac{1}{\omega^2 - \omega1^2} \, d\omega \right)$$

$$\Delta 1 := \overrightarrow{\Delta n(\omega1) \cdot \Delta\alpha(\alpha)} = \begin{bmatrix} -4.6178 \cdot 10^{11} \\ -1.1882 \cdot 10^{11} \\ -4.8841 \cdot 10^{10} \\ -1.0652 \cdot 10^{11} \\ -3.9079 \cdot 10^{10} \\ -3.1557 \cdot 10^{10} \\ \vdots \end{bmatrix} \qquad \omega1 = \begin{bmatrix} 6.4508 \cdot 10^{15} \\ 6.4645 \cdot 10^{15} \\ 6.4782 \cdot 10^{15} \\ 6.4919 \cdot 10^{15} \\ 6.5056 \cdot 10^{15} \\ 6.5193 \cdot 10^{15} \\ \vdots \end{bmatrix}$$



$\dfrac{\Delta 1}{10^{12}}$

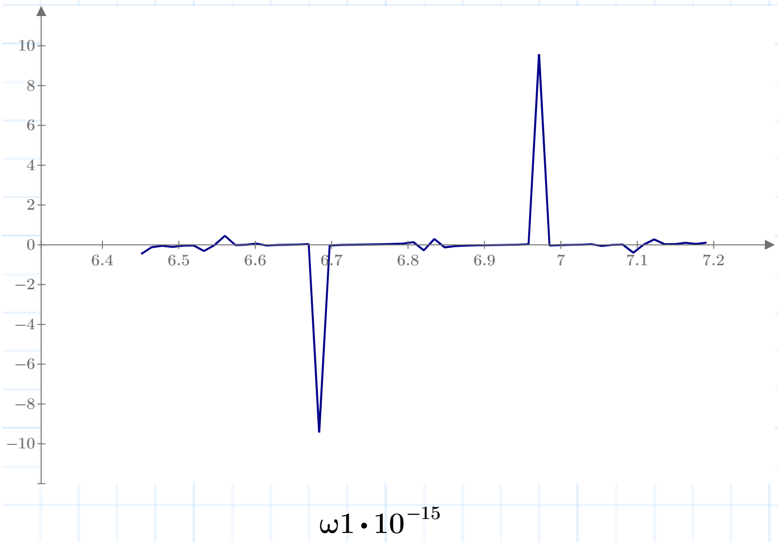
$\dfrac{\omega1}{10^{15}}$

But it looks like you don't need your interpolation function at all because you only use it for the elements of α, so $\Delta\alpha(\alpha)$ will always return the corresponding element of ω. See below

$i := 0 .. \text{last}(\alpha)$ $\qquad \omega 1_i := r2 + i \cdot \dfrac{r1 - r2}{\text{rows}(\alpha)}$

$$\Delta n(\omega 1) := 3 \cdot \frac{10^{10}}{\pi} \left(\int_{r2}^{\omega 1 + 0.0135 \cdot 10^{15}} \frac{1}{\omega^2 - \omega 1^2} \, d\omega + \int_{\omega 1 - 0.0135 \cdot 10^{15}}^{r1} \frac{1}{\omega^2 - \omega 1^2} \, d\omega \right)$$

$$\Delta 2 := \overrightarrow{\Delta n(\omega 1) \cdot \omega} = \begin{bmatrix} -4.6178 \cdot 10^{11} \\ -1.1882 \cdot 10^{11} \\ -4.8841 \cdot 10^{10} \\ -1.0652 \cdot 10^{11} \\ -3.9079 \cdot 10^{10} \\ -3.1557 \cdot 10^{10} \\ \vdots \end{bmatrix}$$



$$\Delta n(\omega 1) := 3 \cdot \frac{10^{10}}{\pi} \left(\int_{r2}^{\omega 1 - 10^{13}} \frac{1}{\omega^2 - \omega 1^2} \, d\omega + \int_{\omega 1 + 10^{13}}^{r1} \frac{1}{\omega^2 - \omega 1^2} \, d\omega \right)$$

$$\Delta 3 := \overrightarrow{\Delta n(\omega 1) \cdot \omega}$$