

Obtención sucesiva del sistema
de ecuaciones

2

$$\begin{aligned}
 &+ 3,21 m' + 3,26 m'' + 1,90 m''' - 2 = 0 \\
 \times &- 5,82 m' - 2,61 m'' + 1,85 m''' - 2 = 0 \\
 \textcircled{3} &\underline{- 0,61 m' - 1,10 m'' - 1,04 m''' + 2 = 0}
 \end{aligned}$$

$$\begin{aligned}
 &- 18,9432 m'' - 11,058 m''' + 11,64 = 0 \\
 &- 8,3484 m'' + 5,9385 m''' - 6,42 = 0 \\
 &\underline{- 10,5953 m'' - 16,9965 m''' + 18,06 = 0}
 \end{aligned}$$

$$\begin{aligned}
 &+ 1,5921 m'' - 1,1285 m''' + 1,22 = 0 \\
 &+ 6,4020 m'' + 6,2244 m''' - 11,64 = 0 \\
 \textcircled{1} &\underline{- 4,8099 m'' - 4,3559 m''' + 12,86 = 0}
 \end{aligned}$$

$$\begin{aligned}
 &+ 81,45146535 m''' - 86,866494 = 0 \\
 &+ 44,93423268 m''' - 136,254242 = 0 \\
 &+ 3,81423264 m''' + 49,384448 = 0 \quad \parallel \quad m''' = \frac{-49,384448}{3,81423264} = -12,94821
 \end{aligned}$$

$$\textcircled{1} \quad -4,8099 m'' + 95,245438 + 12,86 = 0 \quad \parallel \quad m'' = \frac{+108,105438}{4,8099} = +22,44564$$

$$\textcircled{2} \quad -0,61 m' - 24,423234 + 13,854585 + 2 = 0 \quad \parallel \quad m' = \frac{-8,868642}{0,61} = -14,53845$$

- 5,0129

Comprobación

$$\begin{aligned}
 &- 46,669384 + 43,240684 - 24,601599 = +2 \\
 &+ 84,615525 - 58,661498 - 23,954189 = +2 \\
 &+ 8,8686345 - 24,423234 + 13,854585 = -2
 \end{aligned}$$

Sistema de ecuaciones, con los coeficientes reales.
 (Corrigiendo el error de signo que existía en el 2º término de la 3ª ecuación)

$$+3,21 m' + 3,26 m'' + 1,90 m''' - 2 = 0$$

$$-5,82 m' - 2,61 m'' + 1,85 m''' - 2 = 0$$

$$+ m' + m'' + m''' + 2 = 0$$

Con

$$m' + m'' + m''' - 2 = 0$$

Vale esta

$$-10,5951 m'' - 16,9965 m''' + 18,06 = 0$$

$$-2,61 m'' + 1,85 m''' - 2,00 = 0$$

$$-5,82 m'' - 5,82 m''' - 11,64 = 0$$

$$+3,21 m'' + 7,67 m''' + 9,64 = 0$$

$$-54,558465 m''' + 57,942600 = 0$$

$$-81,265184 m''' - 102,13428 = 0$$

$$+26,706419 m''' + 160,110328 = 0$$

$$m''' = \frac{-160,110328}{26,706419} = -5,9952$$

$$+3,21 m'' - 45,983184 + 9,64 = 0$$

$$m'' = \frac{+36,343184}{3,21} = +11,32186$$

$$+5,82 m' - 29,558055 - 11,09112 - 2 = 0$$

$$m' = \frac{-42,641175}{5,82} = -7,32866$$

$$-2,00000$$

Comprobación

$$-23,523043 + 36,919435 - 11,39088 = +2,0055$$

$$+42,649309 - 29,558198 - 11,09112 = +2,00009$$

$$-7,32806 + 11,32498 - 5,9952 = -2,00008$$

Sistema de ecuaciones, con los coeficientes reales en las dos primeras ecuaciones, para hallar los valores de m' ; m'' ; m''' .

$$+3,21 m' + 3,26 m'' + 1,90 m''' - 2 = 0$$

$$-5,82 m' - 2,61 m'' + 1,85 m''' - 2 = 0$$

$$-0,599 m' - 1,12 m'' - 1,05 m''' + 2 = 0$$

$$m' = -7,32806$$

$$m'' = +11,32498$$

$$m''' = -5,9952$$

Comprobación

$$- 23,523043 + 36,919435 - 11,39088 = +2,005$$

$$+ 42,649309 - 29,558198 - 11,09112 = +2,000$$

$$+ 4,389508 - 12,683978 + 6,29496 = -1,9995$$

Sistema de ecuaciones, con los coeficientes reales en las dos primeras ecuaciones, y corrigiendo los de la tercera para que con los valores de m' ; m'' y m''' hallados en el sistema anterior, cierre exactamente el sistema.

$$1^a + 3,21 m' + 3,26 m'' + 1,90 m''' - 2 = 0$$

$$2^a - 5,82 m' - 2,61 m'' + 1,85 m''' - 2 = 0$$

$$3^a + 0,61 m' + 1,10 m'' + 1,04 m''' + 2 = 0$$

Cambiando el signo a los tres primeros terminos de la 3ª ecuación

$$- 18,9432 m'' - 11,0580 m''' + 11,64 = 0$$

$$- 8,3481 m'' + 5,9385 m''' - 6,42 = 0$$

$$- 10,5951 m'' - 16,9965 m''' + 18,06 = 0$$

①

$$- 1,5921 m'' + 1,1285 m''' - 1,22 = 0$$

$$- 6,4020 m'' - 6,2244 m''' - 11,64 = 0$$

$$+ 4,8099 m'' + 4,3559 m''' + 10,42 = 0$$

$$- 81,45146535 m''' + 86,866494 = 0$$

$$- 44,93649609 m''' - 110,400942 = 0$$

$$- 3,81496926 m''' + 194,264436 = 0$$

$$m''' = \frac{+194,264436}{3,81496926} = +51,40884$$

①

$$+ 4,8099 m'' + 380,4653469 + 10,42 = 0$$

$$m'' = \frac{-390,8853469}{4,8099} = -81,26684$$

②

$$+ 0,61 m' - 89,393524 + 55,3284909 + 2 = 0$$

$$m' = \frac{+32,0650331}{0,61} = +52,56562$$

$$+ 23,00765$$

Comprobación

$$+ 168,73564 - 264,929898 + 98,246853 = +2,0$$

$$- 305,931908 + 212,106452 + 95,661109 = +2,0$$

$$+ 32,0650331 - 89,393524 + 55,3284909 = -2,0$$

Probable cambio
de signos en m'

Cambiando el signo a todos los terminos de la 3ª ecuación

$$+ 3,21 m' + 3,26 m'' + 1,90 m''' - 2 = 0$$

$$- 5,82 m' - 3,61 m'' + 1,85 m''' - 2 = 0$$

$$+ 0,61 m' + 1,10 m'' + 1,04 m''' - 2 = 0$$

$$- 10,5951 m' - 16,9965 m'' + 18,06 = 0$$

$$+ 4,8099 m'' + 4,3559 m''' - 12,86 = 0$$

$$- 81,45146535 m''' - 36,866494 = 0$$

$$- 44,93649609 m''' + 136,852986 = 0$$

$$- 3,81496926 m''' - 223,149480 = 0$$

$$m''' = \frac{-223,14948}{3,81496926} = -58,48535$$

$$+ 4,8099 m'' - 430,212386 - 12,86 = 0$$

$$m'' = \frac{+443,072386}{4,8099} = +92,11645$$

$$+ 0,61 m' + 101,328425 - 62,54925 - 2 = 0$$

$$m' = \frac{-36,4491}{0,61} = -60,24442$$

$$- 26,613$$

Comprobación

38,491

$$- 193,38459 + 300,30038 - 111,12204 = +2$$

$$+ 350,62252 - 240,42453 - 108,19420 = +2$$

$$- 36,44910 + 101,32835 - 62,54924 = +2$$

$$+ 3,21 m' + 3,26 m'' + 1,90 m''' - 2 = 0$$

$$- 5,82 m' - 8,61 m'' + 1,85 m''' - 2 = 0$$

$$+ m' + m'' + m''' - 2 = 0$$

$$- 10,5982 m' - 16,9965 m'' + 18,06 = 0$$

$$+ 3,21 m'' + 4,67 m''' - 13,64 = 0$$

$$- 54,558465 m''' + 57,942600 = 0$$

$$- 81,265184 m''' + 144,518528 = 0$$

$$+ 26,706419 m''' - 86,545928 = 0$$

$$m''' = \frac{86,545928}{26,706419} = +3,24064$$

$$+ 3,21 m'' + 24,855409 - 13,64 = 0$$

$$m'' = \frac{-11,215709}{3,21} = -3,49399$$

$$- 5,82 m' + 9,119314 + 5,995184 - 2 = 0$$

$$m' = \frac{13,114498}{5,82} = +2,25335$$

$$+ 2,00000$$

Comprobación

$$+ 4,233253 - 11,390407 + 6,154216 - 2 = 0$$

$$- 13,114494 + 9,119314 + 5,995184 - 2 = 0$$

$$+ 2,25335 - 3,49399 + 3,24064 - 2 = 0$$

Cambiando el signo a la 3ª ecuación.

$$- 6,98498$$

$$+ 2,25335$$

$$+ 5,28224$$

$$+ 7,53559$$

$$- 6,98498$$

$$+ 0,547$$

$$- 2,25335$$

$$+ 7,286627$$

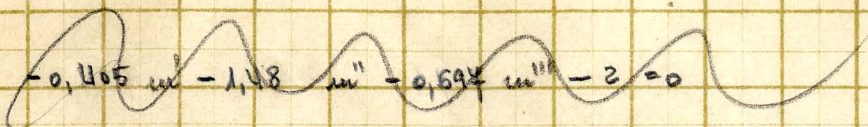
$$- 3,49399$$

$$- 5,74734$$

$$- 5,74734$$

$$+ 1,479287$$

$$+ 1,479$$



$$-0,68 \text{ m}' - 0,97 \text{ m}'' - 1,19 \text{ m}''' + 2 = 0$$