Annales de la faculté des sciences de Toulouse

P. Caubet

Étude des intégrales de la Lune qui dépendent de l'inclinaison

Annales de la faculté des sciences de Toulouse 3e série, tome 7 (1915), p. 59-72
<http://www.numdam.org/item?id=AFST_1915_3_7__59_0>

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ÉTUDE DES INÉGALITÉS DE LA LUNE

QUI DÉPENDENT DE L'INCLINAISON

PAR P. CAUBET

Aide-astronome à l'Observatoire de Toulouse.

Le mouvement de la Lune présente des difficultés qui peuvent tenir ou bien à des causes encore inconnues ou bien aux procédés de calcul. Les erreurs de calcul sont toujours à craindre : même déterminée par deux procédés absolument indépendants, une expression peut être fautive par suite d'erreurs qui se compensent. C'est sans doute ce qui a amené M. H. Andoyer à contrôler par une nouvelle méthode [1] les résultats de Delaunay. J'ai cru utile de poursuivre l'application de sa méthode sous la dernière forme qu'il lui a donnée [2]. J'ai déjà exposé en détail les procédés de calcul adoptés et donné des résultats numériques [3]. Le lecteur peut trouver dans ces diverses publications toutes les indications théoriques et tous les résultats nécessaires pour le calcul. Je me borne donc à publier les nouveaux résultats :

$$M_{93} = \gamma_1^3 \varepsilon_1'.$$

$$\zeta_{93,0} = \frac{9}{2^4} m^2 - \frac{807}{2^8} m^3,$$

$$s_{93,0} = \frac{3}{2^4} m + \frac{333}{2^7} m^2 - \frac{4.919}{2^8} m^3,$$

(1) H. ANDOYER. *Sur quelques inégalités de la longitude de la Lune*, Annales de la Faculté des Sciences de Toulouse, 1re série, t. VI (1892), pp. J1-J33. — *Théorie de la Lune*, collection *Scientia*, Paris, 1902. — *Sur la Théorie de la Lune*, Bulletin astronomique, t. XVIII (1901), pp. 177-208, t. XIX (1902), pp. 401-412, t. XXIV (1907), pp. 395-412.

(2) H. ANDOYER, *Sur la Théorie de la Lune* (troisième article), Bulletin astronomique, t. XXIV (1907), pp. 395-412.

(3) P. CAUBET, *Étude des inégalités de la Lune qui dépendent de l'inclinaison* (thèse de doctorat), Annales de la Faculté des Sciences de Toulouse, 3e série, t. I (1909), pp. 381-471; Annales de l'Observatoire de Toulouse, 2e série, t. VI (1910), pp. 391-481. — *Étude des inégalités de la Lune qui dépendent de l'inclinaison* (suite), Bulletin astronomique, t. XXX (1913), pp. 315-322.

$$\zeta_{93.2} = 0 . m^3,$$

$$s_{93.2} = \frac{11}{2^6} m^2 + \frac{1.325}{2^8 . 3} m^3,$$

$$\zeta_{93.-2} = -\frac{21}{2^3} m + \frac{347}{2^9} m^2 - \frac{1.517}{2^9} m^3,$$

$$s_{93.-2} = -\frac{35}{2^4} m + \frac{259}{2^7} m^2 + \frac{1.875}{2^9} m^3,$$

$$\zeta_{93.-4} = -\frac{21}{2^4} m^2 - \frac{349}{2^7} m^3,$$

$$s_{93.-4} = -\frac{105}{2^6} m^2 + \frac{255}{2^{10}} m^3,$$

$$\zeta_{93.-6} = 0 . m^3,$$

$$s_{93.-6} = \frac{63}{2^{10}} m^3.$$

$$M_{94} = \gamma_1^3 \varepsilon_2'.$$

$$\zeta_{94.0} = \frac{9}{2^4} m^2 - \frac{51}{2^8} m^3,$$

$$s_{94.0} = -\frac{3}{2^4} m + \frac{255}{2^7} m^2 + \frac{119}{2^4} m^3,$$

$$\zeta_{94.2} = 0 . m^3,$$

$$s_{94.2} = -\frac{77}{2^6} m^2 - \frac{2.015}{2^8} m^3,$$

$$\zeta_{94.-2} = \frac{9}{2^3} m + \frac{189}{2^6} m^2 - \frac{447}{2^9} m^3,$$

$$s_{94.-2} = \frac{15}{2^4} m + \frac{377}{2^7} m^2 + \frac{3.587}{2^9 . 3} m^{3*},$$

$$\zeta_{94.-4} = \frac{9}{2^4} m^2 + \frac{175}{2^6} m^3,$$

$$s_{94.-4} = \frac{45}{2^6} m^2 + \frac{2.413}{2^{10}} m^3,$$

$$\zeta_{94.-6} = 0 . m^3,$$

$$s_{94.-6} = -\frac{27}{2^{10}} m^3.$$

$$M_{95} = \gamma_1^2 \gamma_2 \varepsilon'_1.$$

$$\zeta_{95,0} = \frac{75}{2^4} m - \frac{423}{2^7} m^2 - \frac{40.697}{2^9} m^3,$$

$$s_{95,0} = \frac{9}{2} m - \frac{3}{2^2} m^2 - \frac{17.517}{2^8} m^3,$$

$$\zeta_{95,2} = \frac{15}{2^6} m^2 + \frac{1.463}{2^8} m^3,$$

$$s_{95,2} = \frac{3}{2^4} m + \frac{199}{2^7} m^2 + \frac{941}{2^4.3} m^3,$$

$$\zeta_{95,-2} = -\frac{7}{2^4} m + \frac{1.661}{2^7} m^2 + \frac{78.385}{2^9.3} m^3,$$

$$s_{95,-2} = -\frac{21}{2^4} m + \frac{1.417}{2^7} m^2 + \frac{17.667}{2^{10}} m^3,$$

$$\zeta_{95,4} = 0.m^3,$$

$$s_{95,4} = \frac{297}{2^9} m^3,$$

$$\zeta_{95,-4} = -\frac{525}{2^9} m^3,$$

$$s_{95,-4} = \frac{21}{2^6} m^2 - \frac{4.673}{2^{10}} m^3.$$

$$M_{96} = \gamma_1^2 \gamma_2 \varepsilon'_2.$$

$$\zeta_{96,0} = -\frac{75}{2^4} m + \frac{435}{2^7} m^2 + \frac{37.911}{2^9} m^3,$$

$$s_{96,0} = -\frac{9}{2} m + \frac{105}{2^4} m^2 + \frac{15.779}{2^8} m^3,$$

$$\zeta_{96,2} = -\frac{105}{2^6} m^2 - \frac{3.795}{2^8} m^3,$$

$$s_{96,2} = -\frac{7}{2^4} m - \frac{735}{2^7} m^2 - \frac{2.335}{2^6} m^3,$$

$$\zeta_{96,-2} = \frac{3}{2^4} m - \frac{529}{2^7} m^2 - \frac{10.165}{2^9.3} m^3,$$

$$s_{96,-2} = \frac{9}{2^4} m - \frac{337}{2^7} m^2 - \frac{5.045}{2^{10}.3} m^{3*},$$

$$\zeta_{96,4} = 0.m^3,$$

$$s_{96,4} = -\frac{1.155}{2^9} m^3,$$

$$\zeta_{96,-4} = \frac{135}{2^9} m^3,$$

$$s_{96,-4} = -\frac{9}{2^6} m^2 + \frac{765}{2^{10}} m^3.$$

$$M_{97} = \gamma_1 \gamma_2^2 \varepsilon_1', \quad M_{98} = \gamma_1 \gamma_2^2 \varepsilon_2', \quad M_{99} = \gamma_2^3 \varepsilon_1', \quad M_{100} = \gamma_2^3 \varepsilon_2'.$$

$$M_{101} = \gamma_1^3 \varepsilon_1^2.$$

$$\zeta_{101,0} = \frac{75}{2^6} m^2,$$

$$s_{101,0} = -\frac{17}{2^4} + \frac{229}{2^5} m^2,$$

$$\zeta_{101,2} = 0.m^2,$$

$$s_{101,2} = -\frac{1.159}{2^8} m^2,$$

$$\zeta_{101,-2} = -\frac{153}{2^6} m + \frac{465}{2^8} m^2,$$

$$s_{101,-2} = -\frac{501}{2^7} m + \frac{7.689}{2^9} m^2,$$

$$\zeta_{101,-4} = \frac{297}{2^7} m^2,$$

$$s_{101,-4} = \frac{1.719}{2^9} m^2.$$

$$M_{102} = \gamma_1^3 \varepsilon_1 \varepsilon_2.$$

$$\zeta_{102,0} = -\frac{15}{2^3} + \frac{405}{2^6} m - \frac{749}{2^9} m^2,$$

$$s_{102,0} = -\frac{33}{2^3} + \frac{1.215}{2^6} m - \frac{4.765}{2^9} m^2,$$

$$\zeta_{102,2} = -\frac{375}{2^7} m^2,$$

$$s_{102,2} = -\frac{255}{2^6} m - \frac{7.307}{2^8} m^2,$$

$$\zeta_{102,-2} = \frac{441}{2^6}m - \frac{2.189}{2^9}m^2,$$

$$s_{102,-2} = \frac{327}{2^5}m + \frac{339}{2^9}m^2,$$

$$\zeta_{102,-4} = \frac{963}{2^9}m^2,$$

$$s_{102,-4} = \frac{9}{2^2}m^2.$$

$$M_{103} = \gamma_1^3 \varepsilon_2^2.$$

$$\zeta_{103,0} = -\frac{5}{2^4} + \frac{675}{2^6}m - \frac{16.445}{2^{10}.3}m^2 - \frac{323.521}{2^{12}}m^3,$$

$$s_{103,0} = \frac{13}{2^4} + \frac{675}{2^7}m - \frac{2.219}{2^9}m^{2*} - \frac{419.027}{2^{13}}m^{3**},$$

$$\zeta_{103,2} = -\frac{225}{2^6}m - \frac{2.625}{2^9}m^2 + \frac{22.375}{2^{12}}m^3,$$

$$s_{103,2} = -\frac{1.095}{2^7}m + \frac{6.213}{2^{10}}m^2 + \frac{260.499}{2^{13}}m^{3**},$$

$$\zeta_{103,-2} = \frac{81}{2^7}m + \frac{243}{2^7}m^2 - \frac{155}{2^5}m^3,$$

$$s_{103,-2} = \frac{39}{2^5}m + \frac{31}{2^6}m^2 - \frac{89.057}{2^{11}.3}m^{3**},$$

$$\zeta_{103,4} = 0.m^2,$$

$$s_{103,4} = -\frac{3.825}{2^{10}}m^2,$$

$$\zeta_{103,-4} = \frac{243}{2^9}m^2,$$

$$s_{103,-4} = \frac{711}{2^9}m^2.$$

$$M_{104} = \gamma_1^2 \gamma_2 \varepsilon_1^2.$$

$$\zeta_{104,0} = -\frac{3}{2^4} - \frac{2.321}{2^9}m^2,$$

$$s_{104,0} = -\frac{5}{2^4} + \frac{135}{2^7}m + \frac{217}{2^{10}}m^{2*},$$

$$\zeta_{104,2} = -\frac{375}{2^8}m^2,$$

$$s_{104,2} = -\frac{153}{2^7} m + \frac{4.091}{2^9} m^2,$$

$$\zeta_{104,-2} = \frac{141}{2^7} m + \frac{1.279}{2^5} m^2,$$

$$s_{104,-2} = \frac{15}{2^3} m + \frac{48.295}{2^{10}} m^2,$$

$$\zeta_{104,-4} = \frac{855}{2^{10}} m^2,$$

$$s_{104,-4} = \frac{657}{2^9} m^2.$$

$$M_{105} = \gamma_1^2 \gamma_2 \varepsilon_1 \varepsilon_2.$$

$$\zeta_{105,0} = \frac{3}{2} - \frac{135}{2^5} m - \frac{1.575}{2^7} m^2,$$

$$h_{52} = -\frac{51}{2^3} m^2 + \frac{567}{2^4} m^3,$$

$$\zeta_{105,2} = -\frac{135}{5^5} m - \frac{11.025}{2^9} m^2,$$

$$s_{105,2} = -\frac{591}{2^6} m - \frac{22.397}{2^9} m^2,$$

$$\zeta_{105,-2} = \frac{63}{2^5} m - \frac{3.225}{2^9} m^2,$$

$$s_{105,-2} = -\frac{57}{2^6} m + \frac{1.097}{2^9} m^2,$$

$$\zeta_{105,4} = 0.m^2.$$

$$s_{105,4} = -\frac{2.295}{2^9} m^2,$$

$$\zeta_{105,-4} = \frac{675}{2^8} m^2,$$

$$s_{105,-4} = \frac{765}{2^7} m^2.$$

$$M_{106} = \gamma_1^2 \gamma_2 \varepsilon_2^2.$$

$$\zeta_{106,0} = -\frac{51}{2^4} + \frac{3.375}{2^7} m - \frac{16.391}{2^9} m^2 - \frac{1.292.259}{2^{13}} m^3,$$

$$s_{106,0} = -5 + \frac{4.185}{2^7} m - \frac{13.743^*}{2^9} m^2 - \frac{1.468.701}{2^{13}} m^{3**}\ (^1),$$

$$\zeta_{106,2} = \frac{15}{2^6} m - \frac{14.195}{2^{10}} m^2 - \frac{1.848.227}{2^{13}.3} m^3,$$

$$s_{106,2} = \frac{117}{2^7} m - \frac{8.229}{2^{10}} m^2 - \frac{75.899}{2^{12}} m^{3**},$$

$$\zeta_{106,-2} = \frac{189}{2^7} m + \frac{9}{2^7} m^2 - \frac{22.473}{2^{13}} m^3,$$

$$s_{106,-2} = \frac{543}{2^7} m - \frac{4.459^*}{2^9} m^2 - \frac{134.785}{1^{12}.3} m^{3**},$$

$$\zeta_{106,4} = -\frac{7.425}{2^{10}} m^2,$$

$$s_{106,4} = -\frac{2.295}{2^7} m^2,$$

$$\zeta_{106,-4} = 0.m^2,$$

$$s_{106,-4} = \frac{459}{2^{10}} m^2.$$

$$M_{107} = \gamma_1 \gamma_2^2 \varepsilon_1^2, \quad M_{108} = \gamma_1 \gamma_2^2 \varepsilon_1 \varepsilon_2, \quad M_{109} = \gamma_1 \gamma_2^2 \varepsilon_2^2, \quad M_{110} = \gamma_2^3 \varepsilon_1^2,$$
$$M_{111} = \gamma_2^3 \varepsilon_1 \varepsilon_2, \quad M_{112} = \gamma_2^3 \varepsilon_2^2.$$

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(1) Le calcul de ce coefficient a nécessité les compléments suivants à mes résultats antérieurs :

$$(M_{21} = \gamma_1 \varepsilon_1^2)$$

à $\zeta_{21,0}$ $\quad -\dfrac{5.435.017}{2^{15}.5} m^5;$ $\qquad$ à $s_{21,0}$ $\quad -\dfrac{50.748.899}{2^{15}.5} m^5;$

$$(M_{51} = \gamma_1 \gamma_2 \varepsilon_1^2)$$

à $\xi_{51,0}$ $\quad \dfrac{132.965}{2^{14}.3} m^4 + \dfrac{30.127.099}{2^{15}.5} m^5;$ $\qquad$ à $\mu_{51,0}$ $\quad -\dfrac{416.127}{2^{12}} m^4 - \dfrac{34.958.317}{2^{14}.3} m^5;$

à $\eta_{51,0}$ $\quad -\dfrac{5.476.025}{2^{14}.3} m^4 - \dfrac{164.582.005}{2^{16}.3} m^5;$ $\qquad$ à $\lambda_{51,0}$ $\quad \dfrac{174.301}{2^{10}} m^4 + \dfrac{715.338.467}{2^{17}.5} m^5.$

$M_{113} = \gamma_1^3 \alpha$ (β facteur commun).

$$\zeta_{113,1} = \frac{15}{2^7} m^2,$$

$$s_{113,1} = \frac{15}{2^5} m + \frac{211}{2^6} m^2,$$

$$\zeta_{113,-1} = \frac{45}{2^4} m - \frac{1.315}{2^8} m^2,$$

$$s_{113,-1} = \frac{165}{2^5} m - \frac{2.299}{2^8} m^2,$$

$$\zeta_{113,3} = 0.m^2,$$

$$s_{113,3} = -\frac{15}{2^7} m^2,$$

$$\zeta_{113,-3} = \frac{75}{2^5} m - \frac{555}{2^8} m^2,$$

$$s_{113,-3} = \frac{25}{2^4} m - \frac{375}{2^8} m^2,$$

$$\zeta_{113,-5} = \frac{75}{2^8} m^2,$$

$$s_{113,-5} = \frac{75}{2^7} m^2.$$

$M_{114} = \gamma_1^2 \gamma_2 \alpha$ (β facteur commun).

$$\zeta_{114,1} = \frac{345}{2^6} m + \frac{4.925}{2^7} m^2,$$

$$s_{114,1} = \frac{165}{2^4} m + \frac{17.045}{2^8} m^2,$$

$$\zeta_{114,-1} = -\frac{495}{2^6} m - \frac{46.995}{2^9} m^2,$$

$$s_{114,-1} = -\frac{75}{2^4} m - \frac{15.187}{2^8} m^2,$$

$$\zeta_{114,3} = -\frac{35}{2^8} m^2,$$

$$s_{114,3} = \frac{35}{2^8} m^2.$$

$$\zeta_{114,-3} = \frac{25}{2^5} m - \frac{335}{2^9} m^2,$$

$$s_{114,-3} = \frac{25}{2^4} m - \frac{915}{2^8} m^2.$$

$$\mathrm{M}_{115} = \gamma_1 \gamma_2^2 \alpha, \qquad \mathrm{M}_{116} = \gamma_2^3 \alpha.$$

$$\mathrm{M}_{117} = \gamma_1^3 \alpha \varepsilon_1 \text{ (β facteur commun).}$$

$$\zeta_{117,1} = 0.m,$$

$$s_{117,1} = \frac{255}{2^7} m,$$

$$\zeta_{117,-1} = \frac{135}{2^5} m,$$

$$s_{117,-1} = \frac{1.455}{2^7} m,$$

$$\zeta_{117,-3} = \frac{225}{2^6} m,$$

$$s_{117,-3} = \frac{125}{2^5} m.$$

$$\mathrm{M}_{118} = \gamma_1^3 \alpha \varepsilon_2 \text{ (β facteur commun).}$$

$$\zeta_{118,1} = \frac{225}{2^7} m,$$

$$s_{118,1} = \frac{255}{2^6} m,$$

$$\zeta_{118,-1} = \frac{945}{2^7} m,$$

$$s_{118,-1} = \frac{45}{2^4} m,$$

$$\zeta_{118,-3} = -\frac{25}{2^5} m,$$

$$s_{118,-3} = 0.m.$$

$$M_{119} = \gamma_1^2 \gamma_2 \alpha \varepsilon_1 \text{ (}\beta\text{ facteur commun).}$$

$$\zeta_{119,1} = \frac{1.035}{2^7} m,$$

$$s_{119,1} = \frac{1.575}{2^6} m,$$

$$\zeta_{119,-1} = -\frac{1.965}{2^7} m,$$

$$s_{119,-1} = -\frac{285}{2^4} m,$$

$$\zeta_{119,-3} = s_{118,-3} = 0.m.$$

$$M_{120} = \gamma_1^2 \gamma_2 \alpha \varepsilon_2 \text{ (}\beta\text{ facteur commun).}$$

$$\zeta_{120,1} = \frac{495}{2^5} m,$$

$$s_{120,1} = \frac{1.455}{2^7} m,$$

$$\zeta_{120,-1} = \frac{15}{2^5} m,$$

$$s_{120,-1} = \frac{255}{2^7} m.$$

$$\zeta_{120,3} = 0.m,$$

$$s_{120,3} = \frac{25}{2^6} m,$$

$$\zeta_{120,-3} = \frac{75}{2^6} m,$$

$$s_{120,-3} = \frac{225}{2^6} m.$$

$$M_{121} = \gamma_1 \gamma_2^2 \alpha \varepsilon_1, \quad M_{122} = \gamma_1 \gamma_2^2 \alpha \varepsilon_2, \quad M_{123} = \gamma_2^3 \alpha \varepsilon_1, \quad M_{124} = \gamma_2^3 \alpha \varepsilon_2.$$

Discordances avec Delaunay.

A	M	D	E	C
$2D - 3F + l'$	$\gamma_1^3 \varepsilon_2' m^3$	$0'',0013$	$0'',0006$	$-0'',0007$
$2D - F + l'$	$\gamma_1^2 \gamma_2 \varepsilon_2' m^3$	$0,0011$	$0,0004$	$-0,0007$
$3F - 2l$	$\gamma_1^3 \varepsilon_2^2 m^2$	$0,0028$	$0,0027$	$-0,0001$
$F + 2l$	$\gamma_1^2 \gamma_2 \varepsilon_1^2 m^2$	$0,0008$	$-0,0001$	$-0,0009$
$F - 2l$	$\gamma_1^2 \gamma_2 \varepsilon_2^2 m^2$	$0,0171$	$0,0169$	$-0,0002$
$2D - F + 2l$	$\gamma_1^2 \gamma_2 \varepsilon_2^2 m_2$	$0,0043$	$0,0054$	$+0,0011$

$$M_{125} = \gamma_1^4.$$

$$\xi_{125,0} = 0 . m^3,$$

$$\eta_{125,0} = \frac{3}{2^3} m^2 - \frac{45}{2^6} m^3,$$

$$\mu_{125,0} = 0 . m^3,$$

$$\lambda_{125,0} = \frac{1}{2^2} - \frac{11}{2^3} m^2 + \frac{363}{2^7} m^3,$$

$$\xi_{125,2} = \eta_{125,2} = \mu_{125,2} = 0 . m^3,$$

$$\lambda_{125,2} = \frac{11}{2^4} m^2 + \frac{59}{2^3 . 3} m^3,$$

$$\xi_{125,-2} = \frac{3}{2^4} m^2 - \frac{73}{2^5} m^3,$$

$$\eta_{125,-2} = -\frac{3}{2^2} m + \frac{13}{2^5} m^2 + \frac{5.495}{2^8 . 3} m^3,$$

$$\mu_{125,-2} = -\frac{1}{2} m^2 + \frac{23}{2.3} m^3,$$

$$\lambda_{125,-2} = \frac{3}{2^2} m - \frac{9}{2^3} m^2 - \frac{11.899}{2^9 . 3} m^3,$$

$$\xi_{125,-4} = \frac{63}{2^6} m^2 - \frac{915}{2^8} m^3 \text{ (1)},$$

$$\eta_{125,-4} = \frac{9}{2^5} m^2 - \frac{507}{2^8} m^3,$$

(1) $\xi_{125,-4} + \eta_{125,-4} = \ldots + \frac{8.091}{2^{11}} m^4.$

$$\mu_{125,-4} = -\frac{65}{2^6} m^4,$$

$$\lambda_{125,-4} = -\frac{9}{2^7} m^2 + \frac{285}{2^8} m^3,$$

$$\xi_{125,-6} = \frac{27}{2^8} m^3,$$

$$\eta_{125,-6} = \mu_{125,-6} = 0 . m^3,$$

$$\lambda_{125,-6} = \frac{81}{2^9} m^3.$$

$$M_{126} = \gamma_1^3 \gamma_2.$$

$$\xi_{126,0} = -\frac{3}{2^2} m^2 + \frac{207}{2^6} m^3 + \frac{4.195}{2^9} m^4 - \frac{18.481}{2^{12}} m^5,$$

$$\eta_{126,0} = \frac{137}{2^6} m^2 - \frac{213}{2^5} m^3 - \frac{42.913}{2^{10}.3} m^4 + \frac{109}{2^3.3} m^5,$$

$$\mu_{126,0} = m^2 - \frac{9}{2} m^3 - \frac{179}{2^5} m^4 + \frac{3.361}{2^8} m^5,$$

$$\lambda_{126,0} = -\frac{1}{2} + \frac{9}{2^6} m^2 + \frac{441}{2^7} m^3 + \frac{7.721^{**}}{2^{12}} m^4 - \frac{116.839}{2^{10}.3} m^{5***},$$

$$\xi_{126,2} = 0 . m^3,$$

$$\eta_{126,2} = -\frac{3}{2^3} m^2 - \frac{19}{2^4} m^3,$$

$$\mu_{126,2} = 0 . m^3,$$

$$\lambda_{126,2} = \frac{3}{2^3} m + \frac{25}{2^5} m^2 - \frac{211}{2^9.3} m^3,$$

$$\xi_{126,-2} = \frac{9}{2^2} m - 9m^2 + \frac{675}{2^8} m^3 - \frac{57.237}{2^{11}} m^4 \text{ (1)},$$

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(1) $\xi_{126,-2} + \eta_{126,-2} = \ldots + \frac{28.697.249}{2^{13}.3^3} m^5.$

Compléments nécessaires aux résultats antérieurs.

$$(M_{34} = \gamma_1 \gamma_2)$$

à $\xi_{34,2}$ $-\frac{19.308.511}{2^{15}.3^2.5} m^6$; à $\mu_{34,2}$ $-\frac{1.912.219}{2^{11}.3^4} m^6$;

à $\eta_{34,2}$ $+\frac{4.700.851}{2^{14}.3^3} m^6$; à $\lambda_{34,2}$ $+\frac{498.243.529}{2^{16}.3^4.5} m^{6**}$.

(Voir suite de la note page suivante.)

$$\eta_{126,-2} = -\frac{3}{2}m + \frac{95}{2^4}m^2 + \frac{3.011}{2^7.3}m^3 + \frac{1.214.701}{2^{11}.3^2}m^4,$$

$$\mu_{126,-2} = -\frac{3}{2}m^2 + \frac{27}{2^3}m^3 + \frac{1.563}{2^7}m^4 + \frac{27.631}{2^9}m^5,$$

$$\lambda_{126,-2} = \frac{3}{2^2}m - \frac{157}{2^5}m^2 - \frac{2.165}{2^9.3}m^{3*} - \frac{344.981}{2^{10}.3^2}m^{4**},$$

$$\xi_{126,4} = \eta_{126,4} = \mu_{126,4} = 0.m^3.$$

$$\lambda_{126,4} = \frac{33}{2^5}m^3,$$

$$\xi_{126,-4} = \frac{9}{2^5}m^2 + \frac{45}{2^6}m^3,$$

$$\eta_{126,-4} = -\frac{27}{2^4}m^3,$$

$$\mu_{126,-4} = \frac{9}{2^2}m^3,$$

$$\lambda_{126,-4} = \frac{99}{2^7}m^2 + \frac{15}{2^3}m^3,$$

$$\xi_{126,-6} = \eta_{126,-6} = \mu_{126,-6} = 0.m^3,$$

$$\lambda_{126,-6} = -\frac{27}{2^9}m^3.$$

$$M_{127} = \gamma_1^2\gamma_2^2.$$

$$\xi_{127,0} = \eta_{127,0} = -\frac{5}{2^4}m^2 + \frac{645}{2^7}m^3,$$

$$\mu_{127,0} = m^2 - \frac{9}{2^2}m^3,$$

$$\xi_{127,2} = \frac{9}{2^4}m^2 + \frac{21}{2^3}m^3,$$

$$\eta_{127,2} = -\frac{87}{2^5}m^2 - \frac{1.445}{2^8}m^3,$$

$$(M_{81} = \gamma_1^3)$$

à $\zeta_{81,-2}$ $+\frac{109.735}{2^{12}}m^5$; à $s_{81,-2}$ $+\frac{39.329.209}{2^{15}.3^3}m^{5**}$.

$$(M_{82} = \gamma_1^2\gamma_2)$$

à $\zeta_{82,-2}$ $+\frac{49.917.997}{2^{15}.3^3}m^5$; à $s_{82,-2}$ $+\frac{68.035.715}{2^{16}.3^3}m^{5**}$.

$$\mu_{127,2} = -\frac{1}{2}m^2 - \frac{19}{2^2.3}m^3,$$

$$\lambda_{127,2} = -\frac{9}{2^3}m + \frac{61}{2^5}m^2 + \frac{2.849}{2^9.3}m^3,$$

$$\xi_{127,4} = \eta_{127,4} = \mu_{127,4} = 0.m^3,$$

$$\lambda_{127,4} = \frac{27}{2^7}m^2 - \frac{369}{2^8}m^3.$$

$$M_{128} = \gamma_1\gamma_2^3, \quad M_{129} = \gamma_2^4.$$

Discordances avec Delaunay.

A	M	D	E	C
2D — 2F	$\gamma_1^3\gamma^2 m^3$	0″,0020	—0″,0010	—0″,0030