[問題5.2]

(5.33)を(5.32)に代入

$$X = (\lambda - \frac{1}{3} \in \Omega^{2} + \frac{1}{48} e^{2} \Omega^{3}) CAC$$

$$+ \mathcal{C} (\lambda - \frac{1}{3} \in \Omega^{2} + \frac{1}{48} e^{2} \Omega^{3})^{2} (-\frac{1}{2} + \frac{1}{3} CAC + \frac{1}{6} CA2C)$$

$$+ \mathcal{C}^{2} (\lambda - \frac{1}{3} \in \Omega^{2} + \frac{1}{48} e^{2} \Omega^{3})^{3} (-\frac{1}{3} + \frac{29}{144} CAC + \frac{1}{9} CA2C + \frac{1}{48} CA3C)$$

$$= (\lambda - \frac{1}{3} \in \Omega^{2} + \frac{1}{48} e^{2} \Omega^{3}) CAC$$

$$+ \mathcal{C} (\Omega^{2} - \frac{2}{3} \in \Omega^{3}) (-\frac{1}{2} + \frac{1}{3} CAC + \frac{1}{6} CA2C)$$

$$+ \mathcal{C}^{2} \Omega^{3} (-\frac{1}{3} + \frac{29}{144} CAC + \frac{1}{9} CA2C + \frac{1}{48} CA3C) + \mathcal{O}(e^{3})$$

$$= \mathcal{C}AC + \mathcal{C}\Omega^{2} (-\frac{1}{3} CAC - \frac{1}{2} + \frac{1}{3} CAC + \frac{1}{6} CA2C)$$

$$+ \mathcal{C}^{2}\Omega^{3} \left\{ \frac{1}{48} CAC - \frac{2}{3} (-\frac{1}{2} + \frac{1}{3} CAC + \frac{1}{6} CA2C) - \frac{1}{3} + \frac{29}{144} CAC + \frac{1}{9} CA2C + \frac{1}{48} CAC + \frac{1}{9} CA2C + \frac{1}{9} CA2C$$

$$= QCAZ + CQ^{2}(-\frac{1}{2} + \frac{1}{6}CA2Z) + C^{2}Q^{3}(\frac{1}{3} - \frac{1}{3} + (\frac{1}{48} - \frac{2}{9} + \frac{29}{144})CAZ + (-\frac{1}{9} + \frac{1}{9})CAZZ + (\frac{1}{48} - \frac{1}{9} + \frac{1}{144})CAZZ + (-\frac{1}{9} + \frac{1}{9})CAZZ$$

=
$$acaz + ca^{2}(-\frac{1}{2} + \frac{1}{6}cazz) + \frac{c^{2}a^{3}}{48}cazzz + O(c^{3})$$