$$\frac{\det A}{\det(I-e^{-tA})} = t^{-n}\left\{\sum_i Td_i(P^1(A), \cdots P^i(A))\, t^i\right\}$$

$$\Rightarrow \chi(\mathcal{O}_M) = \sum_{v(p)=0} \frac{1}{\det A_p} \cdot \frac{\det A_p}{\det(I-e^{tA_p})}$$

$$= \sum_{v(p)=0} \frac{1}{\det A_p} (-1)^n t^{-n}\left\{\sum_i Td_i(P^1(A_p), \cdots P^i(A_p))(-1)^i t^i\right\}$$

$$= \sum_i (-1)^n t^{-n}\left\{\sum_{v(p)=0} (-1)^i \frac{Td_i(P^1(A_p), \cdots P^i(A_p))}{\det A_p}\right\} t^i$$

$$\Rightarrow \chi(\mathcal{O}_M) = \sum_{v(p)=0} \frac{Td_n(P^1(A_p), \cdots P^n(A_p))}{\det A_p}$$

$$= \int_M Td_n\left(P^1\left(\frac{\sqrt{-1}}{2\pi}\Theta\right), \cdots P^n\left(\frac{\sqrt{-1}}{2\pi}\Theta\right)\right)$$

$$= Td_n(C_1(M), \cdots C_n(M)).$$ the same as the book.

(*) If the def of the Todd polynomials is as follows.

$$\prod_{i=1}^n \frac{x_i}{1-e^{x_i}} = \prod_{i=1}^n \left(-1+\frac{1}{2}x_i - \frac{x_i^2}{12}+\cdots\right)$$

$$= (-1)^n \prod_{i=1}^n \left(1-\frac{x_i}{2}+\frac{x_i^2}{12}+\cdots\right)$$

$$= (-1)^n \left(1-\frac{\Sigma x_i}{2}+\frac{(\Sigma x_i)^2+\Sigma x_i x_j}{12} - \frac{(\Sigma x_i)(\Sigma x_i x_j)}{24} + \cdots\right) \Rightarrow Td_1(P^1) = (-1)^{n+1}\frac{P^1}{2}\quad Td_2(P^1, P^2)$$

$$= \frac{P^{1\,2}+P^2}{12}(-1)^n,\ Td_3(P^1, P^2, P^3) = (-1)^{n+1}\frac{P^1P^2}{24}$$