

$$\begin{aligned}
\mathbb{E}\{X^2\} &= 2 \sum_{m \in \mathcal{A}} \mu_{mk}^2 + \sum_{m \in \mathcal{A}} \sum_{n=m+1}^M (6\mu_{mk}\mu_{nk''} \\
&\quad + \frac{3\pi}{2} \sqrt{\mu_{mk}^3 \mu_{nk''}} + \frac{3\pi}{2} \sqrt{\mu_{mk} \mu_{nk''}^3}) \\
&+ 3\pi \sum_{m \in \mathcal{A}} \sum_{n=m+1}^M \sum_{t=n+1}^M \left(\sqrt{\mu_{mk}^2 \mu_{nk''} \mu_{tk}} \right. \\
&\quad \left. + \sqrt{\mu_{mk} \mu_{nk''}^2 \mu_{tk}} + \sqrt{\mu_{mk} \mu_{nk''} \mu_{tk}^2} \right) \\
&+ \frac{3\pi^2}{2} \sum_{m \in \mathcal{A}} \sum_{n=m+1}^M \sum_{t=n+1}^M \sum_{l=t+1}^M \sqrt{\mu_{mk} \mu_{nk''} \mu_{tk} \mu_{lk}}. \quad (\text{B.7})
\end{aligned}$$

Finally, the CDF of SINR is computed as

$$\begin{aligned}
\mathcal{F}_{\gamma_{ul,k}^{(e)}}(\gamma_{th}) &= \\
&\sum_{m \in \mathcal{A}} \sum_{k' \in \mathcal{U}^k} \left[\prod_{n \in \mathcal{A}} \prod_{k'' \in \mathcal{U}^k} \left(1 - \frac{\mu_{nk''}}{\mu_{mk'}} \right)^{-1} \right]_{(n,k'') \neq (m,k')} \\
&\times \exp \left\{ \frac{a}{\mu_{mk'}} \right\} \left(1 + \frac{\Omega \chi}{\Theta \chi \mu_{mk'} \gamma_{th}} \right)^{-\Theta \chi M}. \quad (\text{B.8})
\end{aligned}$$

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