Lamb-lion Problem on Networks and Its Applications SUNGMIN
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by diffusing lion on the complex networks. We find that the survival probability
$S(t)$ of a lamb decays exponentially on the complex networks including scale-free
networks whose degree distribution follows $P(k) \sim k^{-\gamma}$. We also find that the average life time $< T >$ depends on the size of the underlying networks, N, and it
satisfies the relation $< T > \sim N^{\alpha}$ for $\gamma > 3$. However, for small values of γ (< 3)
we find that $< T >$ does not follow the power-law. Finally, we investigate the topological property of the node at which the lion captures the lamb by measuring the
degree of the node. We also discuss some possible applications of our findings.

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