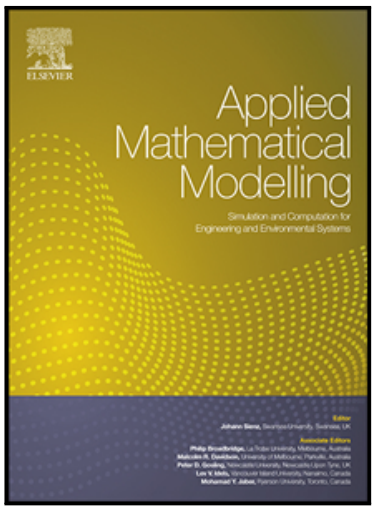

Population dynamics with multiple Allee effects induced by fear factors - a mathematical study on prey-predator interactions

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Highlights

- Mathematical models on effect of fear and strong Allee mechanism have been proposed and analysed.
- We have shown how fear can significantly reduce the per-capita growth rate of prey with generalised predator.
- We have shown that fear has no role in the stability of prey-predator system, with linear functional response.
- Fear effect can stabilize the eco-epidemiological system and promote the coexistence of all the three populations.
- Finally, fear may be a cause of the Allee effect/multiple Allee effects at low population density.