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Hopf bifurcation for the dynamic P53-Mdm2 interaction model with distributed delay, week and strong kernel

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Specific activator and repressor transcription factors which bind to specific regulator DNA sequences, play an important role in gene activity control. Interactions between genes coding such transcripion factors should explain the different stable or sometimes oscillatory gene activities characteristic for different tissues. In this paper, the dynamic P53-Mdm2 interaction model with distributed delays, weak and strong kernel, is investigated. Choosing the delay or the kernel's coefficient as a bifurcation parameter, we study the direction and stability of the bifurcating periodic solutions. Some numerical examples are finally given for justifying the theoretical results.

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