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A theoretical investigation of human exposure to cancer due to toxic metals in agricultural soils

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Abstract. In this research, a mathematical model describing the dynamics of human population exposed to potentially toxic metals capable of causing cancer is formulated and investigated. Heavy metals contamination of both crops and soil as well as human intoxication are captured in the model described by a system of nonlinear evolution equations.

The stability analysis of the model is established using eigenvalues of the Jacobian matrix in the neighborhood of the steady states. Numerical simulations are performed to describe the physical features of the process.

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