

**Gambino, G.; Greco, A. M.; Lombardo, M. C.**

**A group analysis via weak equivalence transformations for a model of tumour encapsulation.**

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Summary: A symmetry reduction of a PDEs system, describing the expansive growth of a benign tumour, is obtained via a group analysis approach. The presence of three arbitrary functions in the model suggests the use of Lie symmetries by using weak equivalence transformations. An invariant classification is given which allows us to reduce the initial PDEs system to an ODEs system. Numerical simulations show a realistic enough description of the physical process.

**MSC:**

[92C50](#) Medical applications (general)

[35K55](#) Nonlinear parabolic equations

[35A30](#) Geometric theory, characteristics, transformations in context of PDEs

[35Q92](#) PDEs in connection with biology, chemistry and other natural sciences

Cited in **3** Documents

**Keywords:**

[weak equivalence classifications](#)

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