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A time-space model for the growth of microalgae biofilms for biofuel production

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#### ACCEPTED MANUSCRIPT

#### Highlights

- A time-space mathematical model for the growth of micro-algae biofilm is proposed.
- The biological behavior is precisely described with a highlight on lipids production.
- Photosynthesis and extracellular matrix excretion are modeled with kinetic laws.
- 1D numerical simulations are shown, in good agreement with the expected productivity.

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