

# Ema Madziová

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*Born:* April 19, 2004—Partizánske, Slovak Republic

*Nationality:* Slovak

## Education

Bachelor's degree in Mathematical Modelling

Faculty of Mathematics and Physics, Charles University, Prague

Expected graduation: June 2026

Bachelor's thesis: *Numerical modelling of contact angle angle hysteresis*

Supervisor: *doc. RNDr. Ondřej Souček, Ph.D.*

## Project experience

Charles University, Faculty of Mathematics and Physics

*Student faculty grant project (2025):* Multi-scale view on the growth of initial condition errors in weather forecasting

*Supervisor:* Mgr. Hynek Bednář, Ph.D.

Conducted a numerical experiment using the two-scale Lorenz '96 model to investigate how small-scale perturbations in the initial conditions influence the accuracy and predictability of large-scale atmospheric motion. The study analyzed error growth dynamics and the propagation of uncertainty across scales in simplified weather forecasting systems.

## Skills

Wolfram Mathematica, MATLAB, LaTeX, Git

## Volunteering

*Fyziklání 2025* — Assisted with logistics and coordination during the international physics competition for high-school students.

*Náboj Junior 2022, Grammar School Partizánske* — Participated in organizing the regional round of the mathematics and physics contest for younger students.

## Languages

*Slovak* — Native

*Czech* — Passive C2 (full comprehension)

*English* — B2/C1

*German* — A2

## References

*prof. RNDr. Josef Málek, CSc., DSc.*

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Last updated: October 14, 2025