Regional Cooperation for
Limited Area Modeling in Central Europe

LACE
nwp central europe

ALADIN

HIRLAM

Introduction to Working Days and short overview of last 2.5 years

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DHMZ · OMSZ · SHMU · ARSO METEO Slovenia · OMSZ · ZAMG · ROMANIA ANM

Scope of the working days

Meeting every 2 years

- Training Course ALARO-0, Mar 2007, Radostovice
- ALARO-1 Working Days, Feb 2010, Budapest
- ALARO-1 Working Days, Jun 2012, Ljubljana
- ALARO-1 Working Days, May 2014, Vienna
- ALARO-1 Working Days, September 2016, Brussels
- **ALARO-1 Working Days, March 2019, Bratislava**

Scope of the working days

Meeting every 2 years

Review of the status of ALARO-1

- ALARO-0-without3MT (January 2007)
- ALARO-0-with3MT (June 2008)
- ALARO-0 baseline (December 2012)
- ALARO-1vA (February 2015)
- **ALARO-1vB (January 2017)**

Scope of the working days

Meeting every 2 years

Review of the status of ALARO-1

Discussion on next steps

- Next ALARO-1 version(s)
- Scientific validation
- Developments

Scope of the working days

Meeting every 2 years

Review of the status of ALARO-1

Discussion on next steps

News from last 2 years

Parameterizations/schemes - developments ongoing,
haven't reached mature state yet

ALARO-1vB
export version cy43t2
namelist with comments

Scientific publications

ALARO-1 version

- ALARO-1vA (February 2015)
  - TOUCANS, ACRANEB2, 3MT

  + modified interpolation to screen level (T2m, RH2m) in stable situations (May 2016)

- ALARO-1vB (January 2017)
  - Shallow convection closure, exponential-random cloud overlaps in radiation and cloud diagnostics, improved sunshine duration and direct solar flux at surface

  + completed shallow convection closure (July 2018) cy43t2export version (July 2018, February 2019)

ALARO status – March 2019

- In the operational use in ALADIN countries
  - **ALARO-0**: at, hr, ro,
  - **ALARO-1vA**: hu,
  - **ALARO-1vB**: be, cz, *ma*, po, sk, si, tr
    model resolution between 8 km – 2 km, 1.3 km

- In EPS systems
  - LAEF, *GLAMEPS*, EPS at HMS,RMI
  - multi-model ShortRangeEPS at AEMET

- In climatological simulations
  - be, cz, fi, ?

DOCTORAL THESIS

Ján Mašek

Broadband radiation scheme fully interacting with clouds

QUARTERLY JOURNAL OF THE ROYAL METEOROLOGICAL SOCIETY
RMetS Royal Meteorological Society
Explore this journal >

esearch Article

Single interval shortwave radiation scheme with parameterized optical saturation and spectral overlaps

J. Mašek, J.-F. Geleyn, R. Brožková, O. Giot, H. O. Achom, P. Kuma

First published: 7 October 2015 Full publication history

Quarterly Journal of the Royal Meteorological Society
RMetS

Research Article

Single interval longwave radiation scheme based on the net exchanged rate decomposition with bracketing

J.-F. Geleyn, J. Mašek, R. Brožková, P. Kuma, D. Degrauwe, G. Hello, N. Pristov

First published: 24 January 2017 | https://doi.org/10.1002/qj.3006 | Cited by: 6

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A Turbulence Scheme with Two Prognostic Turbulence Energies

3381–3402

Ivan Bašták Ďurán, Jean-François Geleyn, Filip Váňa, Juerg Schmidli, and Radmila Brožková

Published online on 6 September, 2018.

https://doi.org/10.1175/JAS-D-18-0026.1

A Compact Model for the Stability Dependency of TKE Production–Destruction–Conversion Terms Valid for the Whole Range of Richardson Numbers

IVAN BAŠTÁK ĎURÁN, JEAN-FRANÇOIS GELEYN,* AND FILIP VÁŇA+

ONPP/CHMI, Prague, Czech Republic

(Manuscript received 2 July 2013, in final form 2 April 2014)

Geosci. Model Dev., 11, 257–281, 2018
https://doi.org/10.5194/gmd-11-257-2018

Geoscientific Model Development
Open Access
EGU

The ALADIN System and its canonical model configurations AROME CY41T1 and ALARO CY40T1

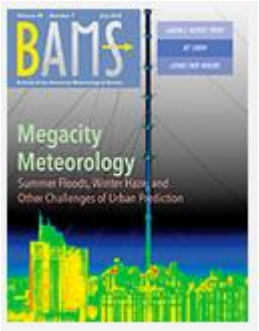
Piet Termonia[1,2], Claude Fischer[3], Eric Bazile[3], François Bouyssel[3], Radmila Brožková[4], Pierre Bénard[3], Bogdan Bochenek[5], Daan Degrauwe[1,2], Mariá Derková[6], Ryad El Khatib[3], Rafiq Hamdi[1], Ján Mašek[4], Patricia Pottier[3], Neva Pristov[7], Yann Seity[3], Petra Smolíková[4], Oldřich Španiel[6], Martina Tudor[8], Yong Wang[9], Christoph Wittmann[9], and Alain Joly[3]

27 Years of Regional Cooperation for Limited Area Modelling in Central Europe

1415–1432

Yong Wang, Martin Belluš, Andrea Ehrlich, Máté Mile, Neva Pristov, Petra Smolíková, Oldřich Španiel, Alena Trojáková, Radmila Brožková, Jure Cedilnik, Dijana Klarić, Tomislav Kovačić, Ján Mašek, Florian Meier, Balázs Szintai, Simona Tascu, Jozef Vivoda, Clemens Wastl, and Christoph Wittmann

Published online on 23 July, 2018.



Developments – scientific talks

- ACRANEB2 radiation scheme (status)

- Enhancement in TOUCANS
  - Shallow convection closure
  - Third Order Moments improvements
  - Mixing length scale choices

- Deep convection: complementary subgrid drafts (status)

- The unification of cloudiness
  - in microphysics, radiation, diagnostic

- Microphysics
  - Prognostic graupel scientific validation

Developments - scientific talks

- Linking ALARO with the SURFEX schemes
  - Modifications needed on TOUCANS and SURFEX side
  - Adaptations related to some fields

- Moving to higher horizonal resolutions
  - Gravity wave drag parameterization
  - Parameterization of unresolved drafts

Still needed at 2.3 km?

ALARO-1 Working Days

- Mixture of scientific talks, local experience and usage in EPS and climate
- Discussions:
  after each topic session and on Wednesday
- Time-table is flexible, always time for questions
- One video session on Tuesday after lunch

- 21 participants from 9 countries

Wish you successful and fruitful days in Bratislava!