



Welcome!



CORSIKA 8

Air-Shower Simulation and Development Workshop

A workshop to discuss the technology and science of air-shower simulations with CORSIKA 8, and meeting of CORSIKA 8 developers and developers-to-be.

Organization
 Konrad Bernlöhr
 Ruth Crespo
 Jim Hinton
 Tim Hunge
 Tanguy Pierog
 Felix Riehn
 Michael Schmelling

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 Web: <https://indico.scc.kit.edu/event/2711>

**Max Planck Institute
for Nuclear Physics
Heidelberg**

12-15 July 2022

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* D. HECK AND T. PIEROG, IKP KIT KARLSRUHE
*-- Author : The CORSIKA development group 21/04/1994
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C
C----- CO(SMIC) R(AY) SI(MULATION FOR) KA(SCADE) -----
C
C A PROGRAM TO SIMULATE EXTENSIVE AIR SHOWERS IN ATMOSPHERE
C
C BASED ON A PROGRAM OF P.K.F. GRIEDER, UNIVERSITY BERN, SWITZERLAND
C
C SELECTABLE INTERACTION MODELS:
C
C HADRONIC HIGH ENERGY
C DPMJET MODEL FROM J. RANFT, UNIVERSITY OF SIEGEN, SIEGEN, GERMANY
C EPOS LHC FROM T. PIEROG, KIT, KARLSRUHE, GERMANY, AND K. WERNER,
C UNIVERSITY OF NANTES, NANTES, FRANCE
C HDPM 'DUAL PARTON MODEL' FROM J.N. CAPDEVIELLE, COLLEGE DE FRANCE,
C PARIS, FRANCE
C NEXUS FROM K. WERNER ET AL., UNIVERSITY OF NANTES, NANTES, FRANCE
C QUARK GLUON STRING MODEL FROM N.N. KALMYKOV AND S.S. OSTAPCHENKO,
C MOSCOW STATE UNIVERSITY, MOSCOW, RUSSIA
C SIBYLL FROM R. ENGEL, R.S. FLETCHER, T.K. GAISSER, P. LIPARI, T.
C STANEV, BARTOL RESEARCH INSTITUTE, UNIVERSITY OF DELAWARE,
C NEWARK, USA
C VENUS FROM K. WERNER, UNIVERSITY OF NANTES, NANTES, FRANCE
C
C HADRONIC LOW ENERGY
C FLUKA MODEL FROM A. FASSO (CERN), A. FERRARI, J. RANFT (SIEGEN),
C P. SALA, INFN MILAN, MILAN, ITALY
C GHEISHA (CERN VERSION) FROM H. FESEFELDT, UNIVERSITY OF AACHEN,
C AACHEN, GERMANY
C URQMD MODEL FROM URQMD COLLABORATION, UNIVERSITY FRANKFURT,
C FRANKFURT (MAIN), GERMANY
C
C ELECTROMAGNETIC ALL ENERGIES
C EGS4 FROM W.R. NELSON, H. HIRAYAMA, W.O. ROGERS,
C SLAC, STANFORD, USA
C NKG FORMULAS FOR SIMULATION OF ELECTROMAGNETIC PARTICLES
C
C KARLSRUHER INSTITUT FUER TECHNOLOGIE (KIT)
C INSTITUT FUER KERNPHYSIK
C POSTFACH 3640
C D-76021 KARLSRUHE
C GERMANY
C-----
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C
C KARLSRUHE INSTITUTE OF TECHNOLOGY WELCOMES COMMENTS CONCERNING THE
C CORSIKA CODE BUT UNDERTAKES NO OBLIGATION FOR MAINTENANCE OF THE
C PROGRAMS, NOR RESPONSIBILITY FOR THEIR CORRECTNESS, AND ACCEPTS NO

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The joy of corsika.F ...

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SUBROUTINE ADDANG( COST0,PHI0, COST,PHI, COST1,PHI1 )
SUBROUTINE ADDANG3( COST0,CPHI0,SPHI0, COST,PHI,
SUBROUTINE ADDANG4( COST0,CPHI0,SPHI0, COST,CPHI,SPHI,
SUBROUTINE ADDANI4( COST0,CPHI0,SPHI0, COST,CPHI,SPHI,
SUBROUTINE ADDANI( COST0,PHI0, COST1,PHI1, DCTH,DPHI )
SUBROUTINE AMOEB( P,Y,MP,NP,NDIM,FTOL,FUNK,ITER,IFLAG )
SUBROUTINE AUGERCORES
SUBROUTINE AUGERPARTIC( ICORPOS )
SUBROUTINE BOX2
SUBROUTINE BOX3
SUBROUTINE CHRMD
SUBROUTINE COOINC
SUBROUTINE COORIN( HEIGHT )
SUBROUTINE DADMUL( F,N,A,B,MINPTS,MAXPTS,EPS,WK,IWK,RESULT,
SUBROUTINE DATAC
SUBROUTINE DECAY1( M0,M3,M4 )
SUBROUTINE DECAY6(AM0,AM3,AM4,AM5,PARAMA,PARAMB,PARAMC,AMPMX,
SUBROUTINE D107D1( MODE,F,A,B,N,X,W )
SUBROUTINE DL2DT( DL,DT,H1,H2,D1,D2,A )
SUBROUTINE DTCCHR( LINE,IS,CVAL,KEYWRD,IKEY,LENVAL )
SUBROUTINE DTCDBL( LINE,IS,DVAL,KEYWRD,IKEY )
SUBROUTINE DTCHX( LINE,IS,DVAL,KEYWRD,IKEY )
SUBROUTINE DTCINT( LINE,IS,IVAL,KEYWRD,IKEY )
SUBROUTINE DTCLOG( LINE,IS,LVAL,KEYWRD,IKEY )
SUBROUTINE DTCRL( LINE,IS,RVAL,KEYWRD,IKEY )
SUBROUTINE DT2DL( DT,DL,H1,H2,A,JINV )
SUBROUTINE EM
SUBROUTINE ETADEC
SUBROUTINE FILOPN( LPRIM )
SUBROUTINE FILOPN
... (>200 more)

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CORSIKA 8 Development

The effort to maintain and further develop the *Fortran* version of CORSIKA is getting increasingly difficult by its complexity. To overcome existing limitations a new version CORSIKA 8 is developed [1, 2] based on modern C++ and Python concepts.

Please find details on the web page: [https:// gitlab.iap.kit.edu/AirShowerPhysics/corsika](https://gitlab.iap.kit.edu/AirShowerPhysics/corsika)

- ⦿ A noble goal and an important project for the whole astroparticle physics community
- ⦿ Thanks for being here – let's get started!