



GENERATING THE TANGENT LINEAR AND ADJOINT MODELS OF THE DAO FINITE VOLUME GCM'S DYNAMICAL CORE BY MEANS OF TAF

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WE ARE APPLYING FASTOPT'S AUTOMATIC DIFFERENTIATION
TOOL TRANSFORMATION OF ALGORITHMS IN FORTRAN (TAF)
TO THE DAO FINITE VOLUME GENERAL CIRCULATION MODEL'S (GCM'S)
DYNAMICAL CORE.

TAF AUTOMATICALLY GENERATES THE TANGENT LINEAR AND ADJOINT
MODELS

FROM THE GCM'S ORIGINAL FORTRAN 90 SOURCE CODE.

IN THIS PRESENTATION WE GIVE A BRIEF INTRODUCTION TO TAF AND
THE

NECESSARY CHANGES TO THE GCM CODE TO MAKE IT TAF COMPLIANT.
WE ALSO DESCRIBE HOW THE GCM'S OPENMP AND MPI PARALLELIZA-
TION CAPABILITIES

HAVE BEEN PRESERVED IN THE TANGENT LINEAR AND ADJOINT MOD-
ELS

AND DISCUSS PERFORMANCE ISSUES.