

Nested Parallelism when Differentiating OpenMP Programs

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Abstract. Automatic differentiation comprises a set of techniques for transforming a given computer program, P , into a new program, P' , capable of computing the derivatives of selected outputs of P with respect to selected inputs of P . If P is a serial program OpenMP has been used in the past to parallelize the derivative computations in P' . However, the case where P is a program including OpenMP directives has not been investigated so far. Our feeling is that nested parallelism may be used to parallelize the derivative computations in P' . For this OMPLab, we would prepare a pair of Fortran programs P and P' so that we can investigate nested parallelism in OpenMP and discuss different parallelization strategies with the workshop participants.