

A TUTORIAL ON THE CONSISTENT ALGORITHMIC TANGENT OPERATOR IN NONLINEAR CONTINUUM MECHANICS

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This presentation is dedicated to Ted Belytschko on the occasion of his 60th Birthday.

Ted and I have taught short courses on nonlinear finite element methods together for over twenty years. These have been excellent opportunities to exchange ideas with workers in the field. In the last one we taught, in December in San Diego, Ted got into a very interesting discussion with one of the attendees on the topic of consistent tangents. He asked me my opinion but there was no time to present it. I kept thinking about this and decided this was my opportunity to convince him of the merits of the consistent algorithmic tangent.