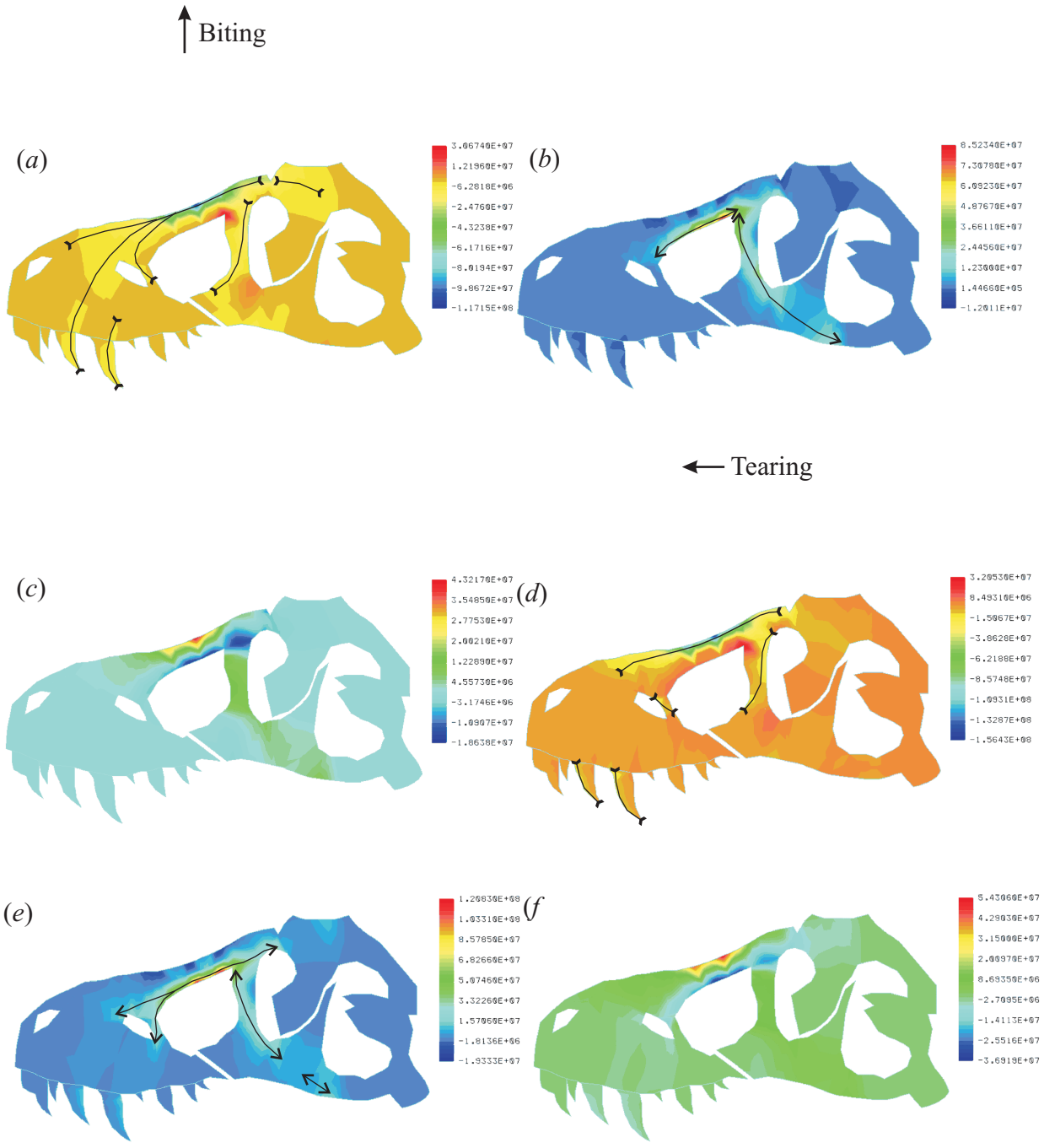
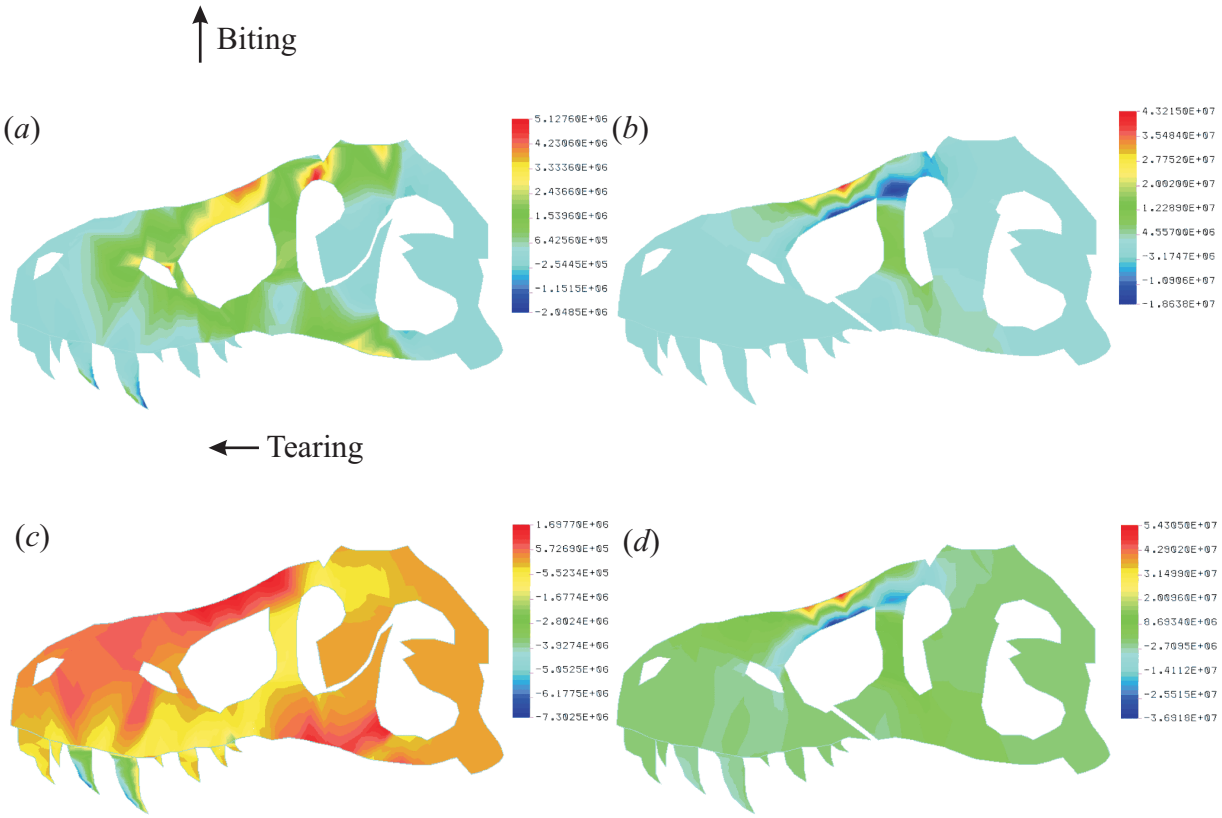
These are electronic appendices to the paper by Rayfield 2004 Cranial mechanics and feeding in *Tyrannosaurus rex*. *Proc. R. Soc. Lond.* B **271**, 1451–1459. (DOI 10.1098/rspb.2004.2755.)

Electronic appendices are refereed with the text. However, no attempt is made to impose a uniform editorial style on the electronic appendices.

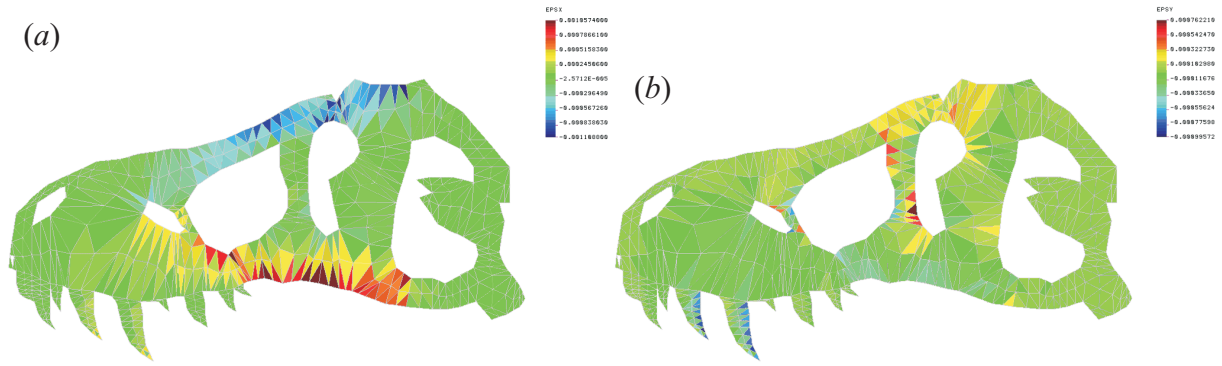
Electronic Appendix A. Stress patterns and orientation in a *T. rex* FE skull model with a mobile maxilla-jugal and mobile postorbital-jugal suture, generated by vertical biting (left column) or tearing (right column): (*a*) principal stress 3 [P3], compressive stress; (*b*) P1 tensile stress; (*c*) shear stress; (*d*) P3 compressive stress; (*e*) P1 tensile stress; (*f*) shear stress. Divergent arrows indicate orientation of tensile stress trajectories; convergent arrows indicate orientation of compressive stress trajectories. Units are Pascals (*Pa*)/ Nm^{-2}.

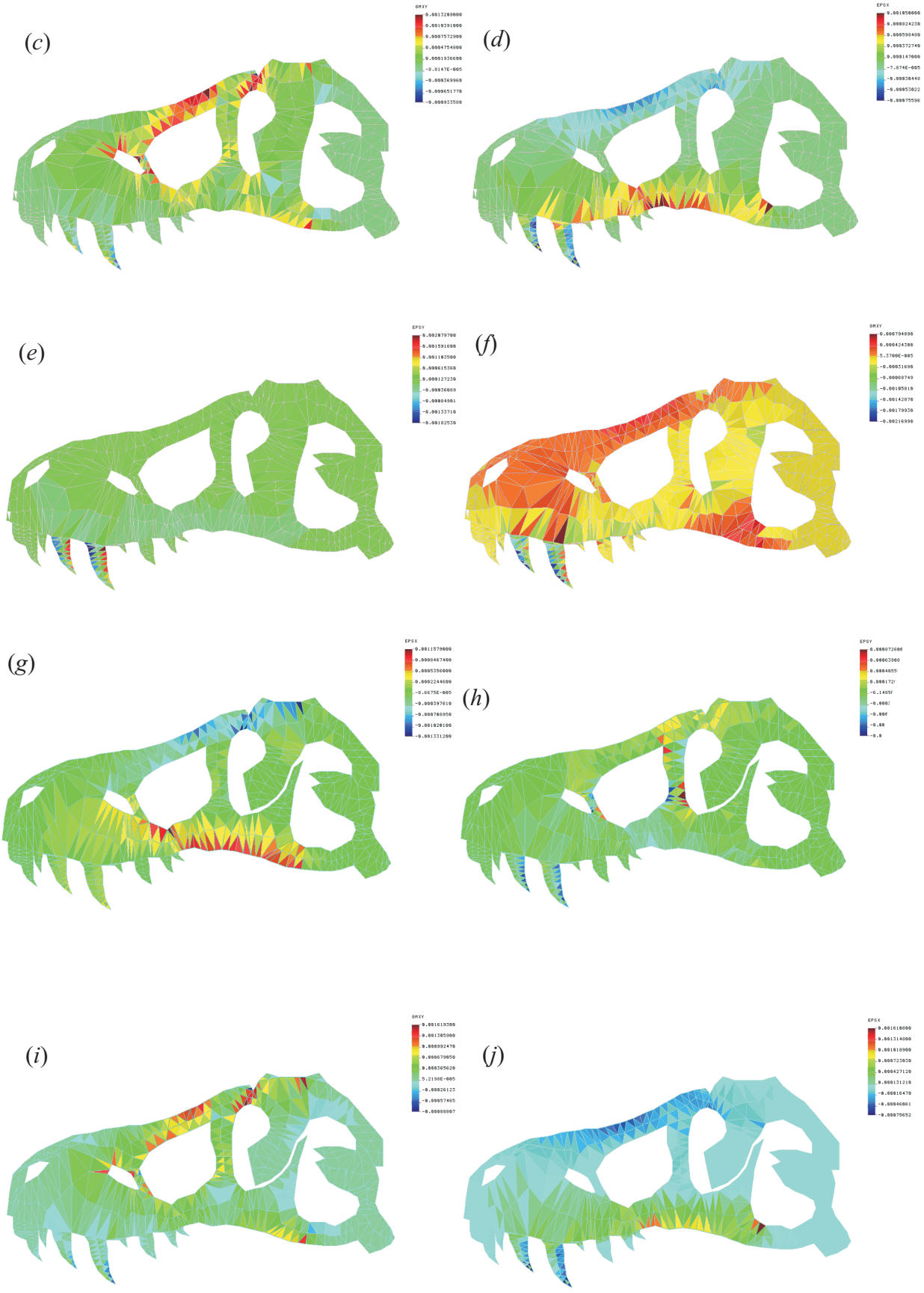


Electronic Appendix B. Shear stress in *T. rex* FE skull models: (*a*) shear stress during biting with a mobile postorbital-jugal suture; (*b*) shear stress during biting with a mobile maxilla-jugal suture; (*c*) shear stress during tearing with a mobile postorbital-jugal suture; (*d*) shear stress during tearing with a mobile maxilla-jugal suture. Units are Pascals (*Pa*) / Nm^{-2}.



Electronic Appendix C. Strain in *T. rex* FE skull models: (*a* – *f*) fused skull model; (*a*) horizontal (X-direction) strain during biting; (*b*) vertical (Y-direction) strain during biting; (*c*) shear strain during biting; (*d*) horizontal strain during tearing; (*e*) vertical strain during tearing; (*f*) shear strain during tearing; (*g* – *l*) mobile postorbital-jugal suture model; (*g*) horizontal strain during biting; (*h*) vertical strain during biting; (*i*) shear strain during biting; (*j*) horizontal strain during tearing; (*k*) vertical strain during tearing; (*l*) shear strain during tearing; (*m* – *r*) mobile maxilla-jugal suture model; (*m*) horizontal strain during biting; (*n*) vertical strain during biting; (*o*) shear strain during biting; (*p*) horizontal strain during tearing; (*q*) vertical strain during tearing; (*r*) shear strain during tearing; (*s* – *x*) mobile maxilla-jugal and postorbital-jugal suture model; (*s*) horizontal strain during biting; (*t*) vertical strain during biting; (*u*) shear strain during biting; (*v*) horizontal strain during tearing; (*w*) vertical strain during tearing; (*x*) shear strain during tearing. Units are microstrain ($\mu\varepsilon$).




(c)
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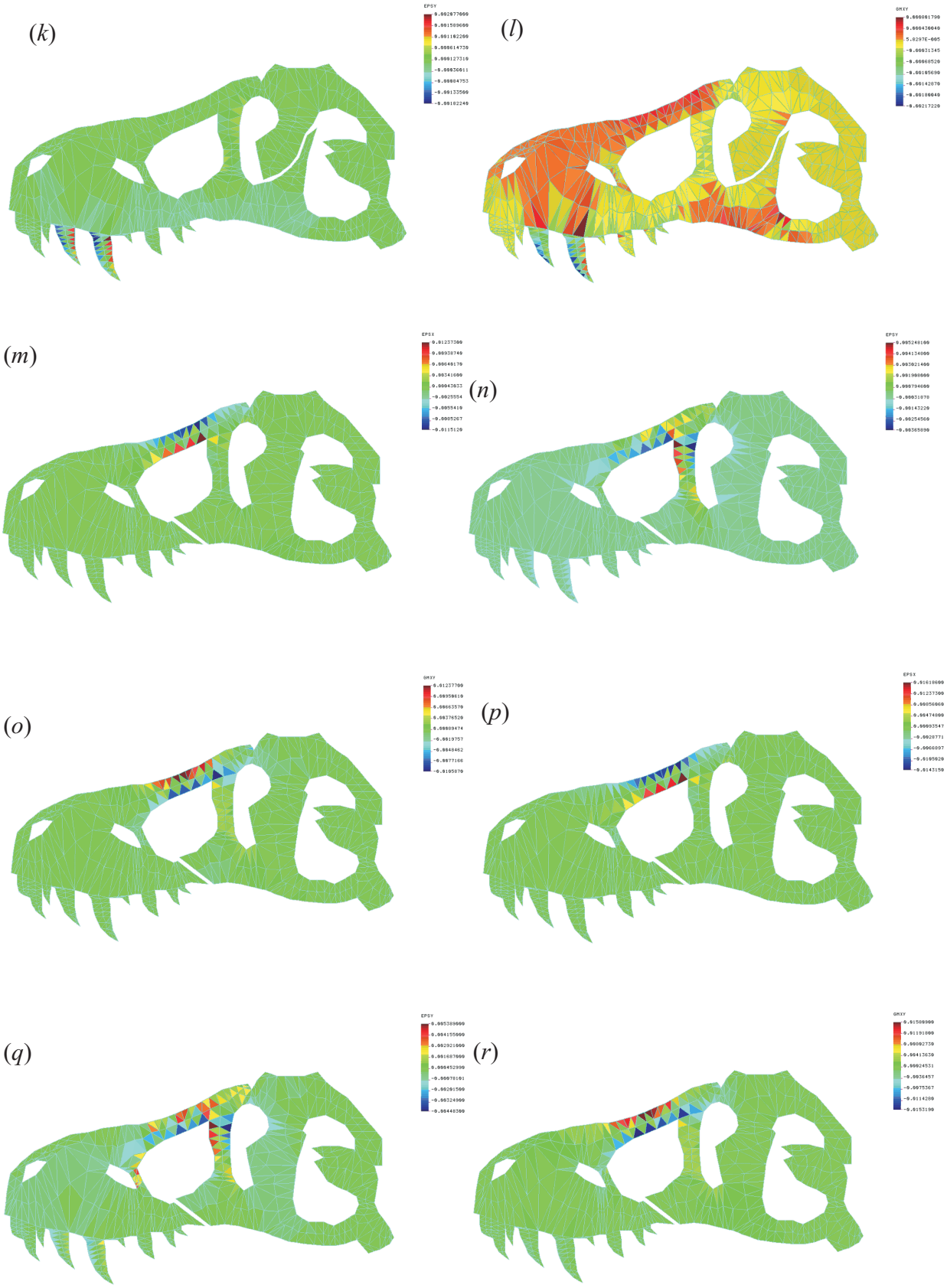
(j)


(k)
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