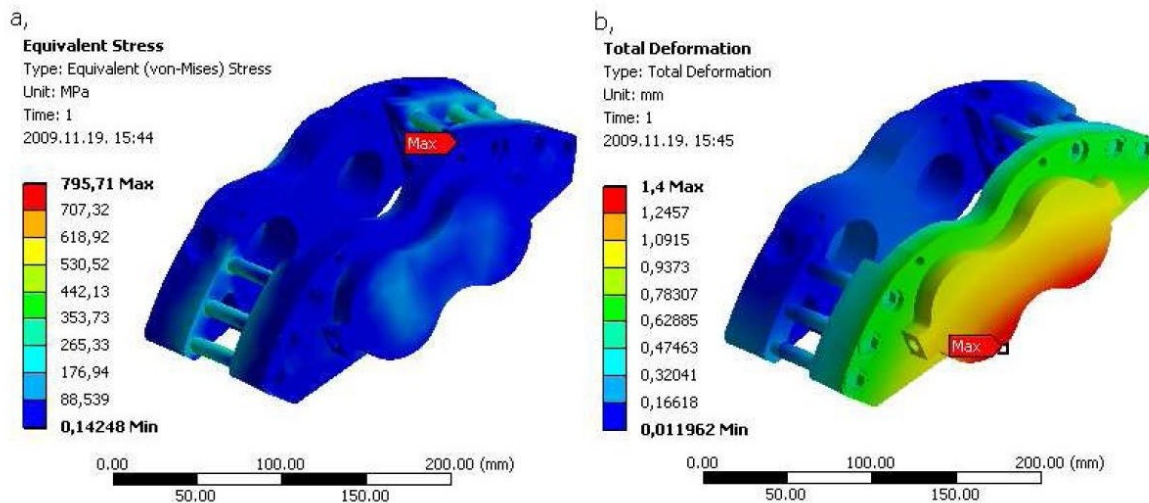
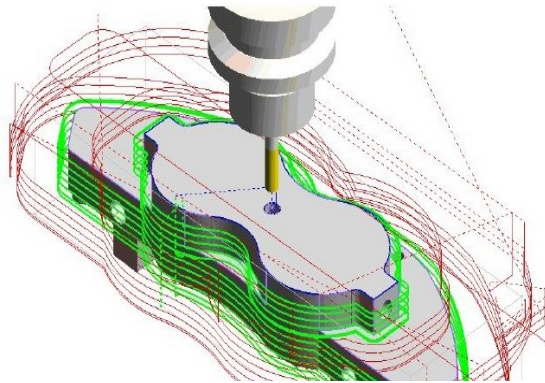


CAD, CAM and FEA applications in the single production

During car racing it is an important standpoint to produce not only the greater engine output but the greater braking force, too. The greater braking force can be guaranteed by modifying the brake system which includes the change of the brake master cylinder, the brake pipes, the brake discs, the brake calipers and the brake pads, too. Among these the change of the brake caliper causes the greatest problem, well this guarantees connection between the stud-stands and brake discs. To assembly the high-power brake calipers often meets with difficulties because of lots of wheel knuckle, which



have differences of joining points (bolt fastening) respectively. These problems can be treated in case of luck by manufacturing individual supports which means often compromise, its increases substantially the purchasing time and cost respectively, too. One alternative of this can be such designing-checking-manufacturing process that can be changed flexibly by which the individual claims can be satisfied properly. The appearance of the software supporting the engineering work was indispensable to take place the above conception in which it can be produce such parametric model-system at which changing some parameters the developed geometry can be adjusted to the given racing car. Because of the property and personal safety it is needed to submit to analysis the changed parametric 3D model in each case so to be convinced of that the mechanism operates safely.

Following the designing and checking the CAM software can follow the changes automatically so during minimal time new CNC programs can be made based on the new part. This designing-checking-manufacturing system provides extremely short transit times and high reliability. However the models (3D body-model, material model, finite element boundary conditions, manufacturing parameters...) has to be worked out in more detailed form as in traditional cases, that is the working up of the process requires substantially greater resource.

Recent publications on the topic:

1. Á Horváth, Z Csík, J Sukumaran, P Neis, M Andó: Development of brake caliper for rally-car. SUSTAINABLE CONSTRUCTION & DESIGN 3: pp. 191-198. (2012)
2. HORVÁTH Ádám, ANDÓ Mátyás, OLDAL István. Compared the cast and machined caliper deformation.