Hong-Sheng Liu

Dept. Mechatronics Engineering, Harbin Institute of Technology, China.
Email: hs_liu_hit@163.com Tel: 0086-130 6988 4126 (cell phone), 0086-451-8621 8035

EDUCATION

Ph.D. in Computational Mechanics, Dept. Materials Science & Engineering, Harbin Institute of Technology. June 2007.
Thesis: Meshless reproducing kernel particle method numerical simulation of sheet metal forming.
M.S. in Numerical Simulation of Sheet Metal Forming, Dept. Materials Science & Engineering, Harbin Institute of Technology. July 2003.
Thesis: Establishment of a ductile fracture criterion based on LEMAITRE damage theory and prediction of sheet metal forming limit.
B.S. in Material Forming and Control Engineering, Dept. Materials Science & Engineering, Harbin Institute of Technology. July 2001.
Thesis: Experimental research on rotary draw bending with stretch force.

RESEARCH INTERESTS

- Meshless methods and its application in metal forming
- FE numerical simulation of metal forming
- Hot stamping of high strength steel sheet metal

RESEARCH EXPERIENCE

A lecture July 2007-present

Dept. Mechatronics Engineering, Harbin Institute of Technology, China

- Continued the research on the meshlees numerical simulation of sheet metal forming on the basis of previous work done during the doctoral graduate stage.
- Developed a meshless numerical model based on a multiple scale meshless to implement the adaptive meshless numerical analysis of sheet metal forming process.
- Developed a FE numerical model based on thermal-mechanical coupled to exactly model and simulate hot stamping process.
- I am defining the material behavior of 08Al to predict the fracture defect during viscous pressure forming (VPF) of sheet metal by using the user defined subroutine VUMAT in ABAQUS.

PhD Candidate Sep 2003-Jun 2007

Dept. Materials Science & Engineering, Harbin Institute of Technology, China

- Developed a meshless numerical model (3D) to analyze sheet metal forming.
- Developed a meshless numerical model (2D) to analyze bulk metal forming.
- Conducted the experimental research and FE numerical simulation on shear stress-induced wrinkle

in stamping of thin sheet metal used in car body manufacturing.

Postgraduate Sep 2001-July 2003

Dept. Materials Science & Engineering, Harbin Institute of Technology, China

- Developed a criterion for ductile fracture to exactly predict sheet metal (LY12) forming limit and fracture defect in sheet metal forming.
- Investigated the determination of material constants in the criterion on the basis of the stress and strain calculated from numerical simulation of sheet metal forming by LS-DYNA.
- Predicted the forming limits in spherical punch bulging, cylindrical deep drawing and square-cup deep drawing by means of the ductile fracture criterion.

Undergraduate Sep 2000-July 2001

Dept. Materials Science & Engineering, Harbin Institute of Technology, China

- Conducted the experiment of rotary draw bending with stretch force and investigated the effects of processing parameters on the shape precision of bent part.

TEACHING EXPERIENCE

Spring	Material Mechanics	Harbin Institute of Technology
Fall	Material Processing	Harbin Institute of Technology

SKILLS

Programming	Fortran, C++,AUOCAD, Origin8.0
Documentation	MS Office
Language	English, Native Mandarin

SELECTED PUBLICATIONS AND PRESENTATIONS

1 **LIU Hongsheng**, Xing Zhongwen. Numerical simulation of bulk metal forming by meshless method. *International Journal of Modern Physics B*.2009, 23(6-7) :1615-1620

2 **H. S Liu**, Y.Y Yang and C.F Li. Reproducing kernel particle method numerical modeling of thin sheet superplastic tension forming. *Materials Science Forum*. 2007, 551-552:303-308

3 **H. S Liu**, Z.W Xing and Y.Y Yang. Simulation of sheet metal forming process using reproducing kernel particle method. *Communications in Numerical Methods in Engineering*. (In press,DOI:10.1002/cnm.1229)

4 **H. S Liu**, Y.Y Yang. Division of support in meshless method with partition of unity quadrature. International Conference on the Mechanical Engineering and Mechanics, 2005(1): 812-817

5 **Hongsheng LIU**, Wei LIU, Zhongwen XING, Jun BAO, Chengxi LEI. Adaptive multiple scale meshless simulation on springback analysis in sheet metal forming.(Submitted for publication to *Engineering Analysis with Boundary Element*, major revision is required)

6 **Hongsheng Liu**, Peter Thomson, Weili Xu and Shenglin Di. Numerical analysis of shell structure forming by Meshfree Method. (Submitted for publication to *Computer Methods in Applied*

Mechanics and Engineering, major revision is required)

7 **Liu HS**, Yang YY, Yu ZQ *et al*. The application of a ductile fracture criterion to the prediction of the forming limit of sheet metals. *Journal of Materials Processing Technology*,2009,209(14):5443-5447

8 **H. S Liu**, Z. W Xing, J Bao, B. Y Song. Investigation of the hot stamping process for advanced high strength steel sheet by numerical simulation. *Journal of Materials Engineering and Performance*.2010,19(3):325-334

9 **Liu Hongsheng**, Liu Wei, Bao Jun, Xing Zhongwen, Song Baoyu. Numerical and experimental investigation into hot forming of ultra high strength steel sheet. *Journal of Materials Engineering and Performance*(*DOI:10.1007/s11665-010-9641-1*)

AWARDS AND HONORS

2001 Outstanding graduate honor in Heilongjiang province
2002 Renmin Scholarship
2004 Guanghua Scholarship
2005 Samsung First Prize Scholarship

REVIEWER

Communications in Numerical Methods in Engineering
Journal of Materials Engineering and Performance

COMMUNITY SERVICE

Chinese Mechanical Engineering Society, Member

INTERESTS

Ice skating, Traveling, Tennis, Bowling