MATH 667- SPRING 2008- GEOMETRIC FLOWS
Papers on geometric flows- a selection

A. ***Mean curvature flow*** (classical solutions)

1. Huisken, Gerhard *Flow by mean curvature of convex surfaces into spheres.* J. Differential Geom. 20 (1984), no. 1, 237–266.

2. Huisken, Gerhard *Contracting convex hypersurfaces in Riemannian manifolds by their mean curvature.* Invent. Math. 84 (1986), no. 3, 463–480.

3. Ecker, Klaus; Huisken, Gerhard *Mean curvature evolution of entire graphs.* Ann. of Math. (2) 130 (1989), no. 3, 453–471.

4. Huisken, Gerhard *Asymptotic behavior for singularities of the mean curvature flow.* J. Differential Geom. 31 (1990), no. 1, 285–299.

5. Ecker, Klaus; Huisken, Gerhard *Interior estimates for hypersurfaces moving by mean curvature.* Invent. Math. 105 (1991), no. 3, 547–569.

BOOK: Klaus Ecker, ***Regularity Theory for Mean Curvature Flow*** (Birkhäuser, 2004)

6. Altschuler, Steven; Angenent, Sigurd B.; Giga, Yoshikazu *Mean curvature flow through singularities for surfaces of rotation.* J. Geom. Anal. 5 (1995), no. 3, 293–358.

7. Angenent, S. B.; Vel 'azquez, J. J. L. *Degenerate neckpinches in mean curvature flow.* J. Reine Angew. Math. 482 (1997), 15–66.

8. Huisken, Gerhard; Sinestrari, Carlo *Mean curvature flow singularities for mean convex surfaces.* Calc. Var. Partial Differential Equations 8 (1999), no. 1, 1–14.

9. Huisken, Gerhard; Sinestrari, Carlo *Convexity estimates for mean curvature flow and singularities of mean convex surfaces.* Acta Math. 183 (1999), no. 1, 45–70.

10. Ecker, Klaus *A local monotonicity formula for mean curvature flow.* Ann. of Math. (2) 154 (2001), no. 2, 503–525.

B. Ricci Flow.

1. Hamilton, Richard S. ***Three-manifolds with positive Ricci curvature***. J. Differential Geom. 17 (1982), no. 2, 255–306.

2. Hamilton, Richard S. *Four-manifolds with positive curvature operator.* J. Differential Geom. 24 (1986), no. 2, 153–179.

3. Hamilton, Richard S. *Non-singular solutions of the Ricci flow on three-manifolds.* Comm. Anal. Geom. 7 (1999), no. 4, 695–729.

4. *The entropy formula for the Ricci flow and its geometric applications* Author: Grisha Perelman . arXiv:math/0211159

BOOK: B.Chow,P.Lu,L.Ni, ***Hamilton's Ricci Flow***, AMS (2006).

5. *Notes on Perelman's papers* Authors: Bruce Kleiner, John Lott arXiv:math/0605667

6. *Manifolds with positive curvature operators are space forms* Authors: Christoph Boehm, Burkhard Wilking arXiv:math/0606187

C. Inverse Mean Curvature Flow, Penrose inequality, Mass

1. Bartnik, Robert *The mass of an asymptotically flat manifold.* Comm. Pure Appl. Math. 39 (1986), no. 5, 661–693.

2. Huisken, G.; Ilmanen, T. *The Riemannian Penrose inequality.* Internat. Math. Res. Notices 1997, no. 20, 1045–1058.

3. Huisken, Gerhard *Geometric concepts for the mass in general relativity.* Trends in mathematical physics (Knoxville, TN, 1998), 299–306, AMS/IP Stud. Adv. Math., 13, Amer. Math. Soc., Providence, RI, 1999.

4. **Huisken, Gerhard; Ilmanen, Tom *The inverse mean curvature flow and the Riemannian Penrose inequality.*** J. Differential Geom. 59 (2001), no. 3, 353–437.

5. Bray, Hubert L. *Proof of the Riemannian Penrose inequality using the positive mass theorem.* J. Differential Geom. 59 (2001), no. 2, 177–267.

6. Bray, Hubert L.; Chruściel, Piotr T. *The Penrose inequality.* The Einstein equations and the large scale behavior of gravitational fields, 39–70, Birkhuser, Basel, 2004.

7. Bray, Hubert L.; Neves, André *Classification of prime 3-manifolds with Yamabe invariant greater than* $\mathbb{RP}^3$. Ann. of Math. (2) 159 (2004), no. 1, 407–424.

8. G.Huisken, *Isoperimetric Inequalities in manifolds of Non-negative Ricci curvature* (Oberwolfach report and lectures at FU Berlin, spring 2007)