

“Somewhat about Disks in Massive Star Formation”

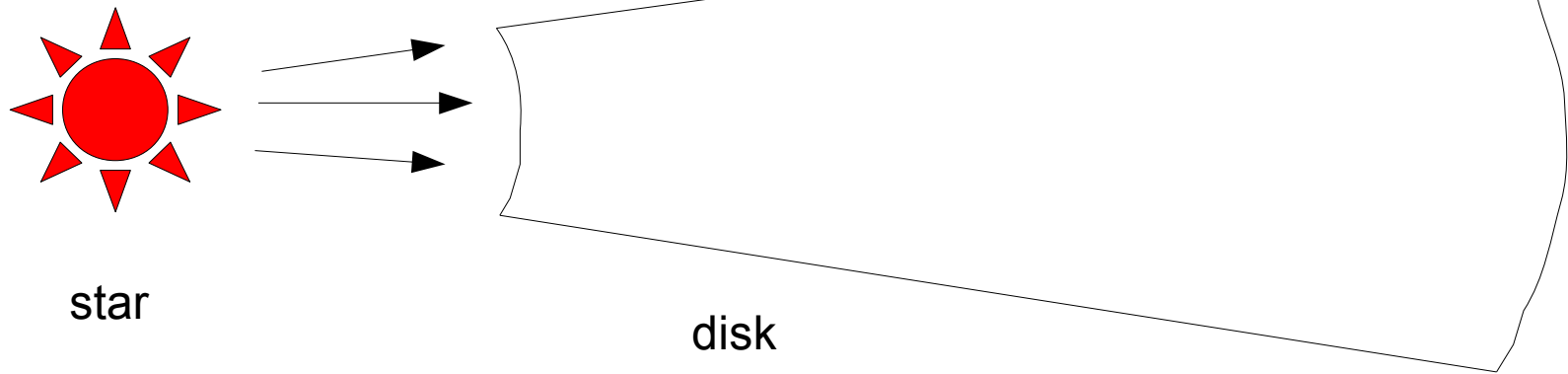


Rolf Kuiper

MPIA Student Workshop

March, 26th 2007, Lago di Como

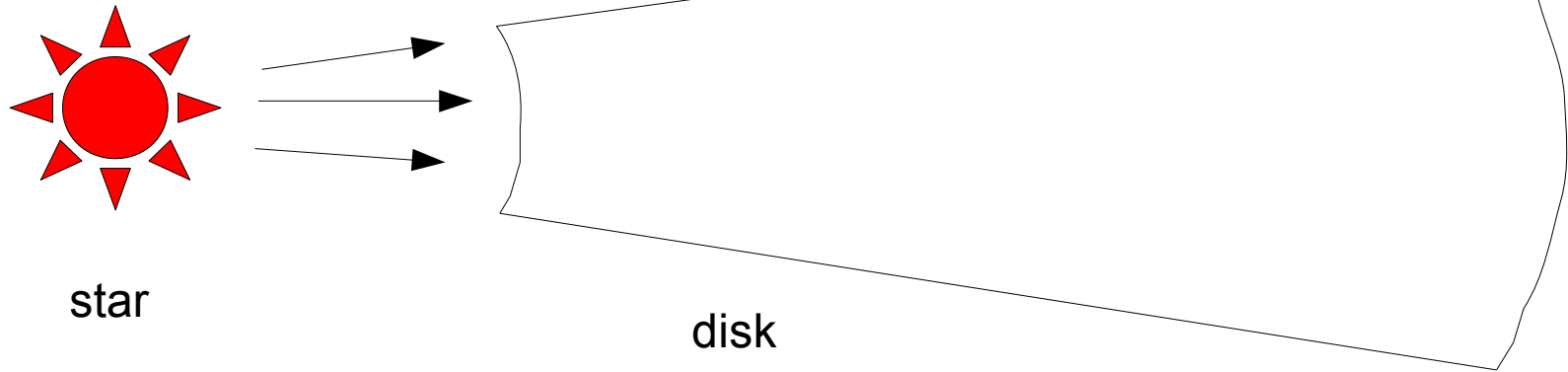
§ 1. Sketch



- Influence of radiation on the environment:
 - Evaporation time scale, length, ...
 - Planet formation, ... → Oliver
- The role of accretion disks in Massive Star Formation: → Cassie
 - Radiation pressure, ...
 - Dependence of core size, mass, ...

Those are my principles. If you don't like them I have others. (*Graucho Marx*)

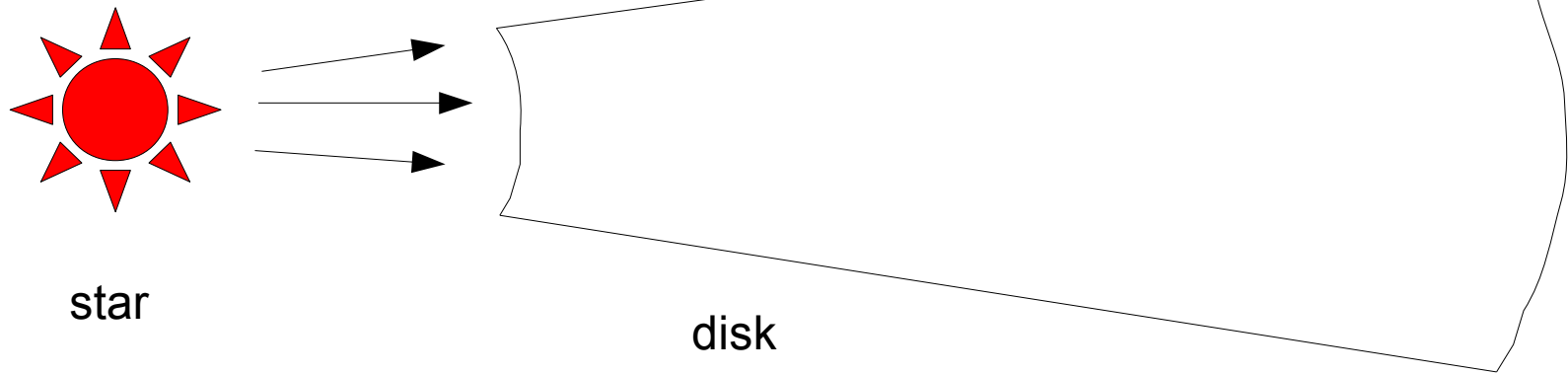
§ 1. Sketch



Radiation Pressure:

- Yorke & Sonnhalter (1999):
[gray flux-limited diffusion]

§ 1. Sketch

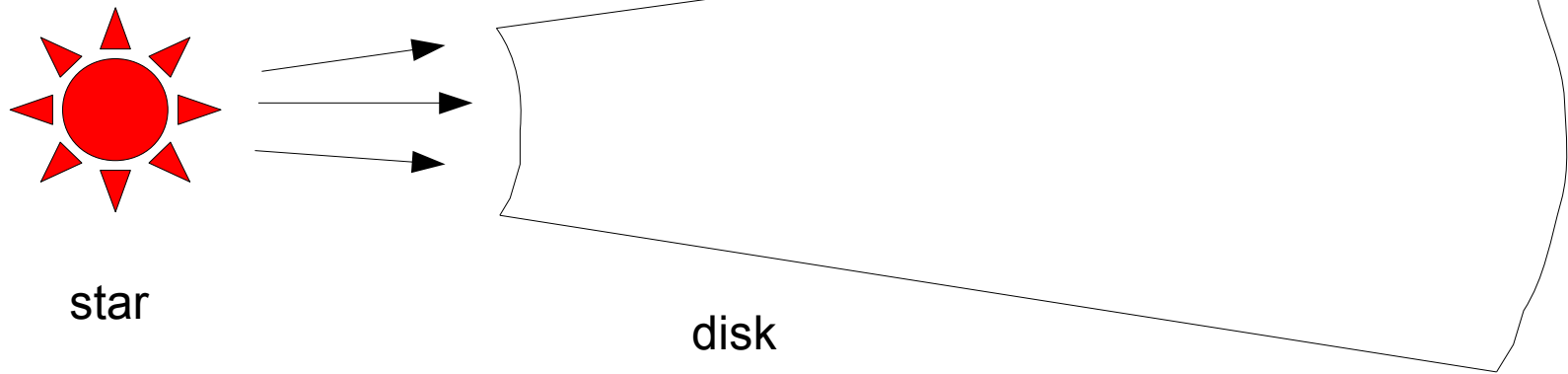


Radiation Pressure:

- Yorke & Sonnhalter (1999):
[gray flux-limited diffusion]
 - Yorke & Sonnhalter (2002):
[frequency-dependent flux-limited diffusion]
- High influence on accretion rate.
→ High computing time.

The secret of life is honesty and fair dealing..if you can fake that, you've got it made.
(*Graucho Marx*)

§ 1. Sketch



Radiation Pressure:

- Yorke & Sonnhalter (1999):

[gray flux-limited diffusion]

- Yorke & Sonnhalter (2002):

[frequency-dependent flux-limited diffusion]

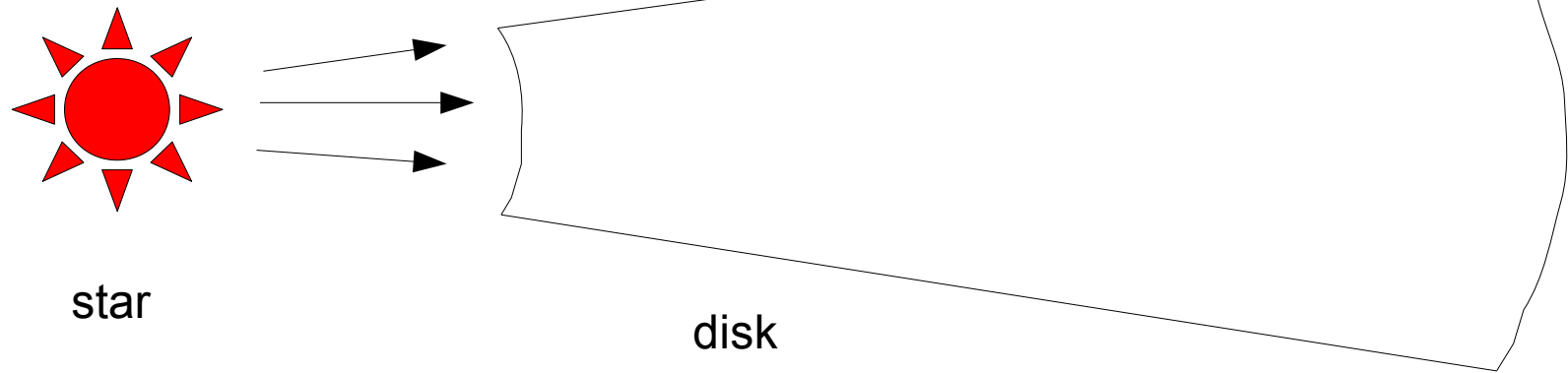
→ High influence on accretion rate.

- [gray flux-limited diffusion + frequency dependent ray-tracing]

→ Less computing time.

Either this man is dead or my watch has stopped. (*Graucho Marx*)

§ 1. Sketch

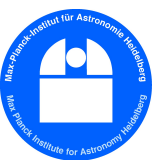


Radiation Pressure:

- [gray flux-limited diffusion + frequency dependent ray-tracing]
- Less computing time.
- High influence on accretion rate.
- Higher resolution, especially of the inner region / gap.
- Magnetic effects / hot spots.

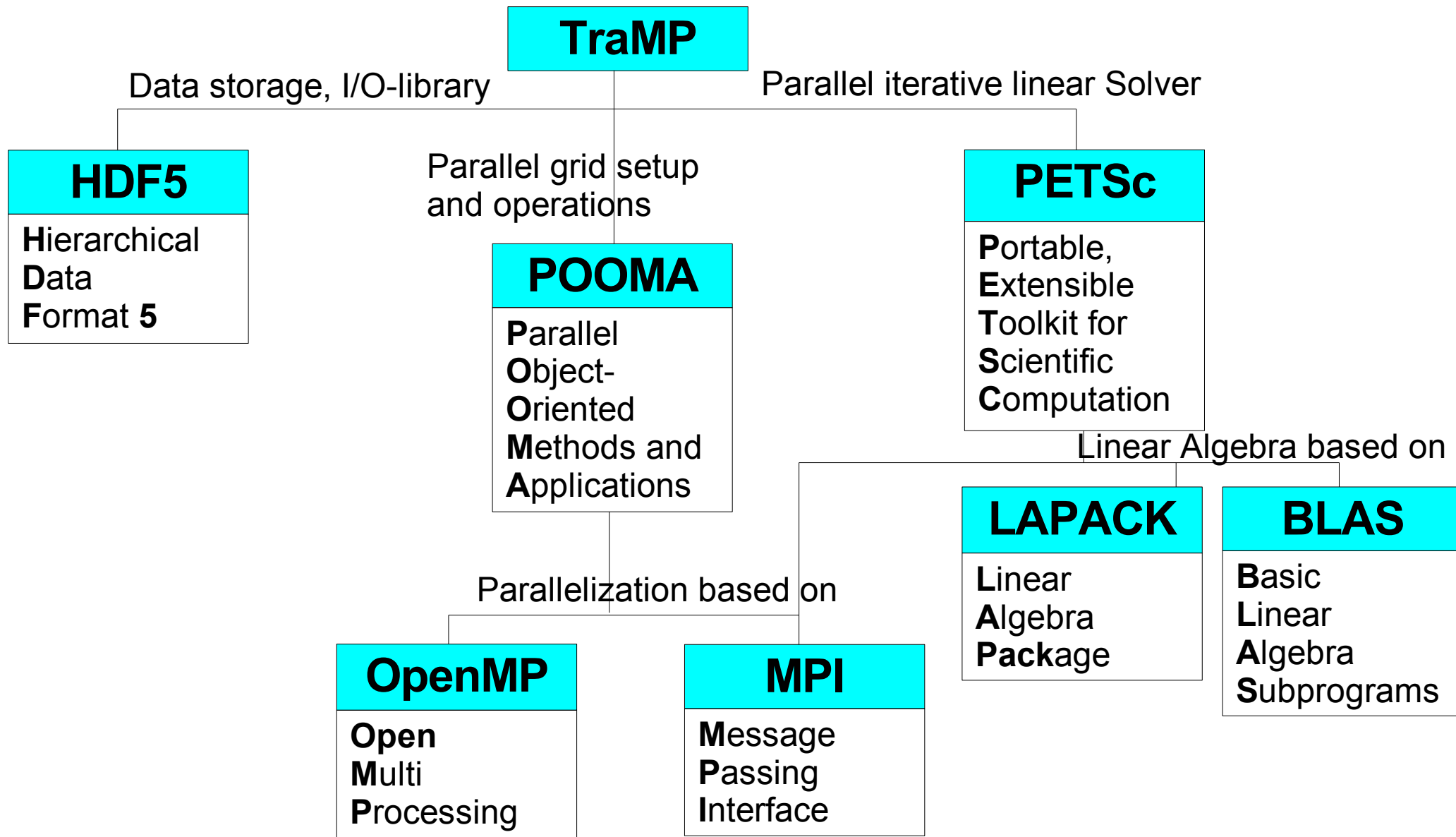
§ 2. TraMP & Libraries

- TraMP:
 - 3D-Hydro code written in C++.
 - Explicit solution of Ideal & Viscous HydroDynamics.
 - In Cartesian, Cylindrical and Spherical domain.
 - (Magnetic fields) ... implemented, but not tested yet
 - (Self-gravity) ... implemented, but not tested yet
 - (Radiation transport) ... my work, in progress
- Radiation transport divided into steps:
 - 1.) Flux limited diffusion
 - 2.) Ray-tracing
 - 3.) Wavelength dependence of ray-tracing
- TraMP uses several libraries for grid setup, parallelization and solvers.



I worked myself up from nothing to a state of extreme poverty. (*Graucho Marx*)

§ 2. TraMP & Libraries



I don't want to belong to any club that will accept me as a member. (*Graucho Marx*)

§ 3. Visualization?

VisIt

Visualization ToolKit (VTK)

..... ?



- Do you work with VisIt or VTK or ... ?
- Do you know a good tutorial?
- ...
- ... **please, let me know!!** ...

Thanks for your attention!

Don't forget the announcements:

Massive Star Formation: Observations confront Theory

10th - 14th September 2007
Convention Center
Heidelberg, Germany

Scientific Organization Committee:

H. Beuther (Chair)	S. Kurtz
M. Burton	K. Menten
E. Churchwell	F. Molte
G. Garay	F. Palla
Th. Henning	J. Tan
P. Hø	M. Walmsley

Contact: H. Beuther



Webmaster: J. Steinacker & H. Beuther

Totgesagte leben länger!
Chaos Mannheim wird 20 Jahre alt!



<http://www.chaos-mannheim.de>

26.04.1987: Gründung des Vereins

29.04.2007: 9. und letzte Verbandsrunde, währenddessen sowie anschließend (ab ca. 16 Uhr) Jubiläums- und Jahresabschluss-**Feier im Uniclub** (Adresse: L4, 11 in Mannheim)

11.05.2007: Chaosschach und Chaosparty in der MUSIK INSEL (Adresse: Dffenéstr. 10 a-c, Mannheim; Parkmöglichkeiten direkt auf dem Gelände, Straßenbahn: Haltestelle Luzenberg, Infos / Wegbeschreibung unter <http://www.musikinsel.de>)

Programm am 11.05.2007

17:30 Uhr Einlass
18:00 Uhr Ehrungen
18:30 Uhr Schachturnier (Meldeschluss 18:20 Uhr)
ca. 21:30 Uhr Livemusik Zero Dawn
ca. 22:15 Uhr Siegerehrung Schachturnier
ca. 22:30 Uhr Livemusik X-Punch



X-PUNCH

<http://www.x-punch.de>

danach: Feiern bis open end

Eintritt: 5 € ohne Turnierteilnahme, 7 € mit Turnierteilnahme

Was gibt es sonst noch? Getränke und kleine Speisen zu fairen Preisen!

Chaos-Schachturnier (5min-Blitz)

- Turniermodus: Lasst Euch überraschen!
- Preise: 50 / 30 / 20 €
- Turnierruhe: gibt es nicht, stattdessen: Musik vom Band
- Rauchverbot: gibt es auch nicht
- Voranmeldung möglich bis zum 3.5.2007 (sabine@chaos-mannheim.de oder 0179 2011684, S. Klein)