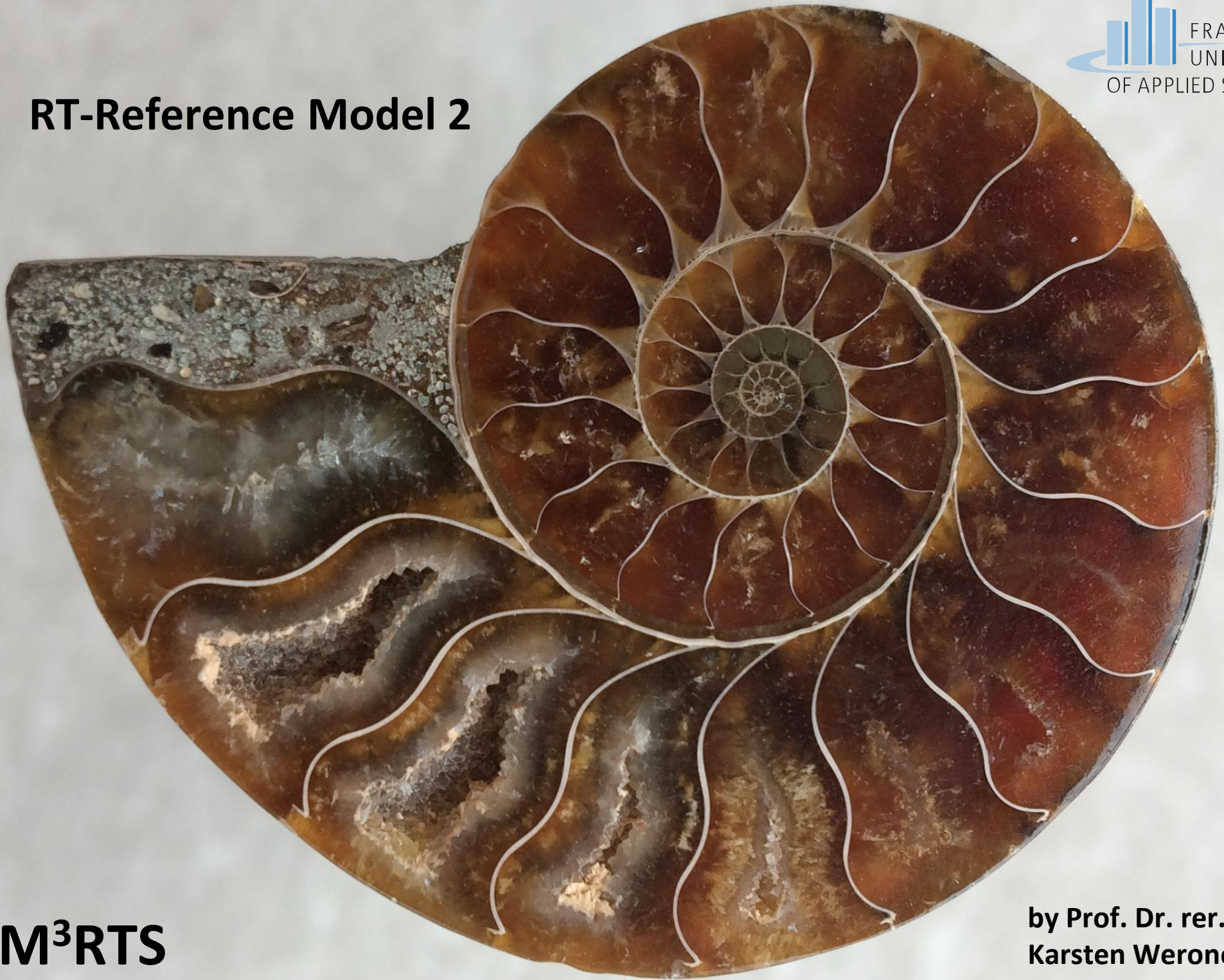


## RT-Reference Model 2



**M<sup>3</sup>RTS**

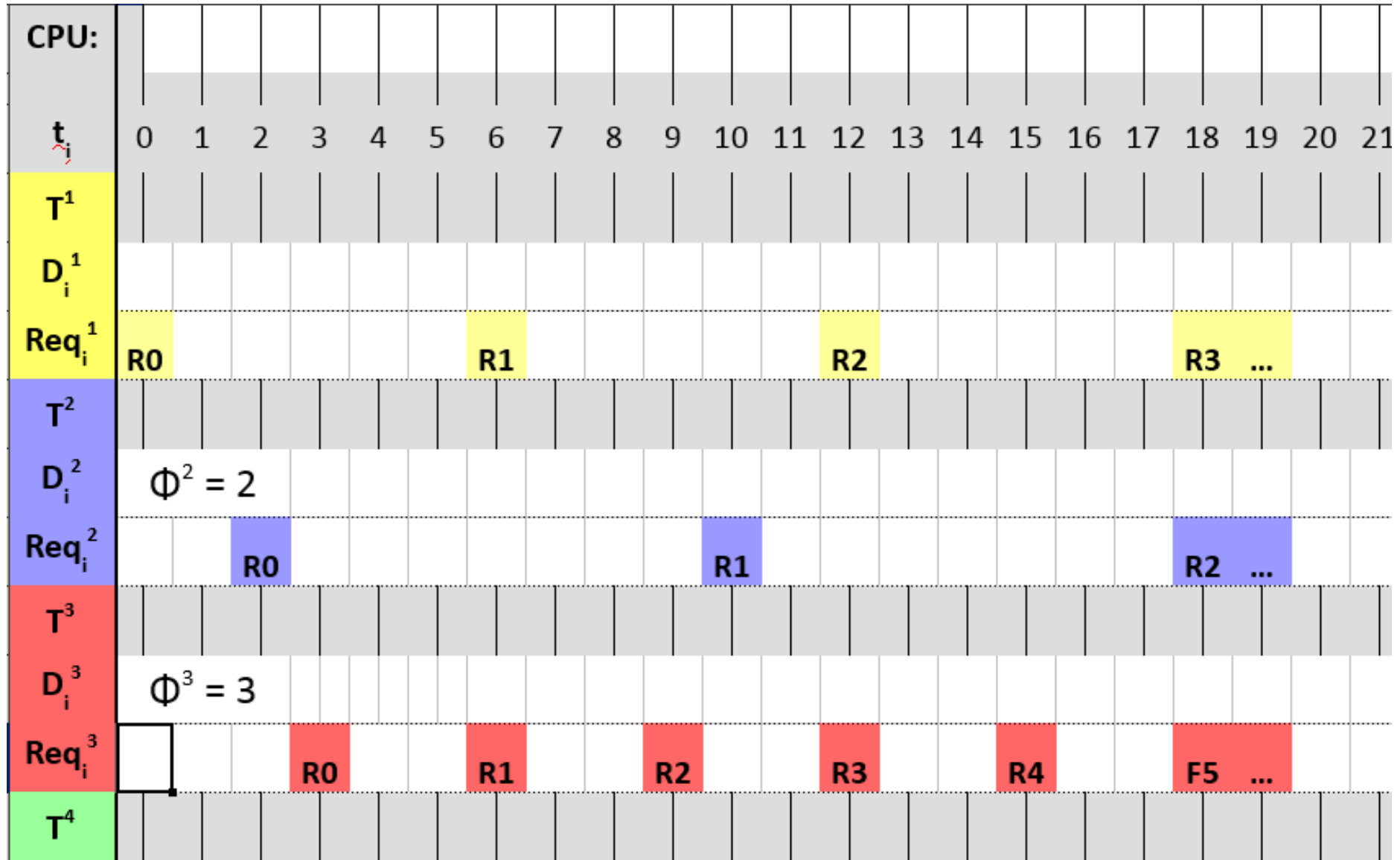
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# **M<sup>3</sup>Real-Time-Systems**

## **SS 2017**

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**Faculty 2**  
**Computer Science and Engineering**

RT-Reference Model 2



The phase does not effect the hypercycle and  
does not influence the schedulability considerations!

Latency: (e.g.) a preemption of a running job will by another one will lead to a context switch. This leads to some latencies.

Example: RT-Ref-Model 1:  $t_{\text{Req}}$  : request time may be sequenced by:

- the arrival time of a signal of the physical system (trigger)  
(e.g. interrupt handling, IR-service routine)
- the request time to run a job  
(schedule the job to a runnable state)
- the release time  
(context switch)
- job ready to start

Latency reduces the feasible interval.

Define  $\Delta t_{\text{jitter}} = \max [ | t_{\text{as is}} - t_{\text{to be}} | ]$

example on white board for  $\Delta t_{\text{period}}$

Jitter reduces the the  $\Delta t_{\text{period}}$  by  $2 \cdot \Delta t_{\text{jitter}}$

and leads to a reduction of the feasible interval and to earlier deadlines accordingly.

There are different kinds and different definitions in the literature for jitter!

How to model a Single Job in a periodic model?

How to model a **Single Job** in a periodic model?

just set the period for a periodic task to infinite

→ the second and all other Job will be at the end of time...

$$T^i = ( t_0^i, \Delta t_{\text{exec}}^i, \Delta t_{\text{per}}^i )$$

$$\rightarrow T^i = ( t_0^i, \Delta t_{\text{exec}}^i, \infty )$$

$$\rightarrow J_0^i = ( t_0^i, \Delta t_{\text{exec}}^i )$$

$$\rightarrow J_1^i = ( \infty, \Delta t_{\text{exec}}^i )$$

$$\rightarrow J_2^i = ( \infty, \Delta t_{\text{exec}}^i )$$

...



except the phase:

The RT-Reference Model 2 is not necessary for the examination!