

FONT installation/commissioning issues

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Proposal for ATF2: upstream system

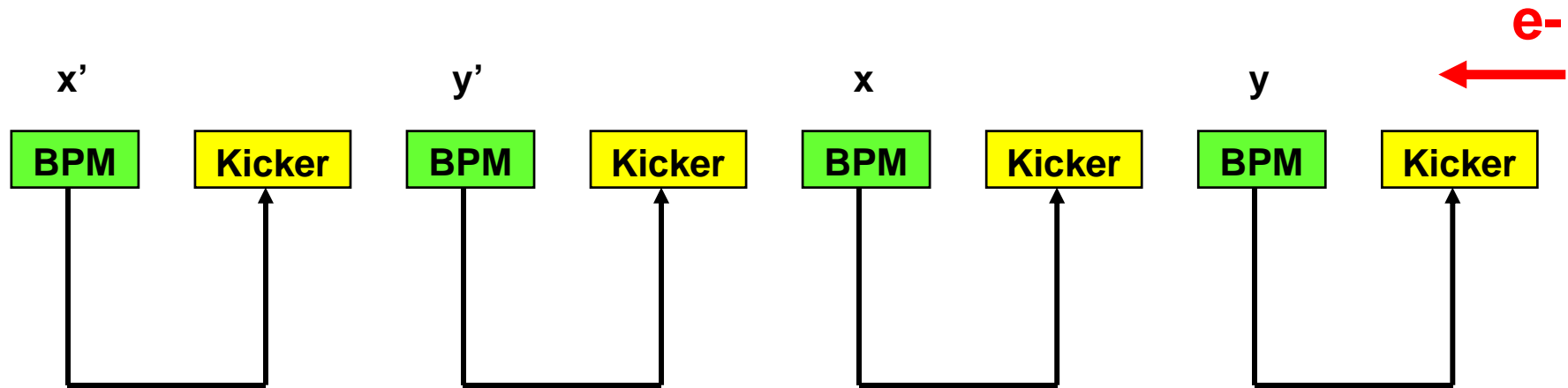
- 1) Fast bunch-bunch feedback for multibunch mode
- 2) Slow pulse-pulse feedback (uses same hardware as 1)
- 3) Feed-forward from DR to extraction line

Feedback system:

Assuming x, x', y, y' correction:

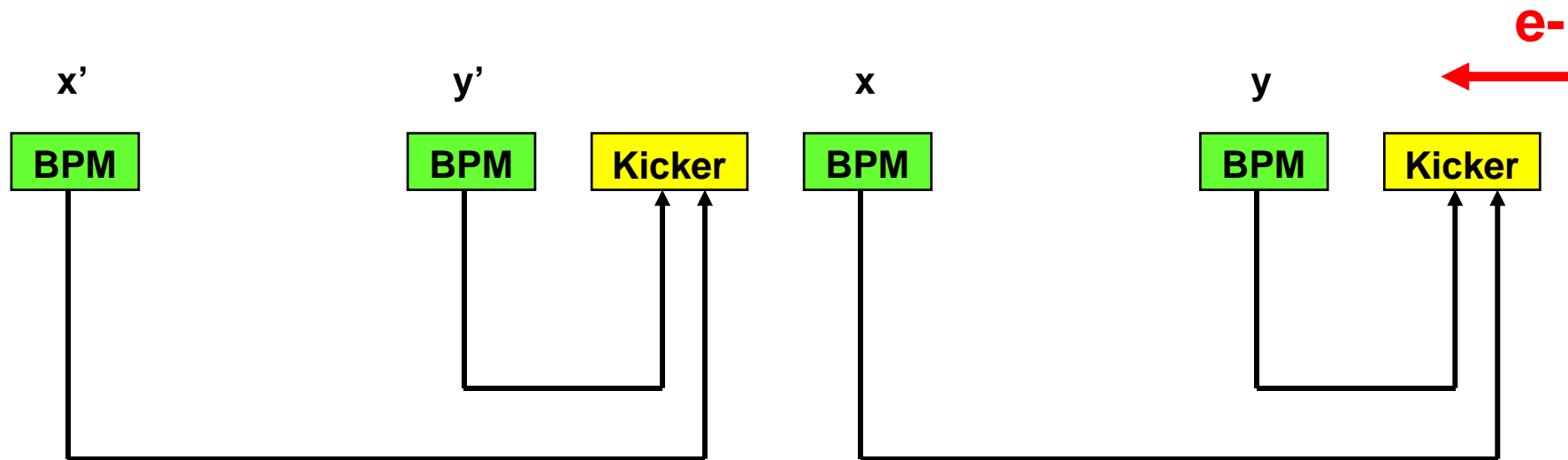
minimal setup requires 4 BPMs and 4 kickers
(or 2 combined x-y kickers)

Schematic ATF2 feedback layout: 1

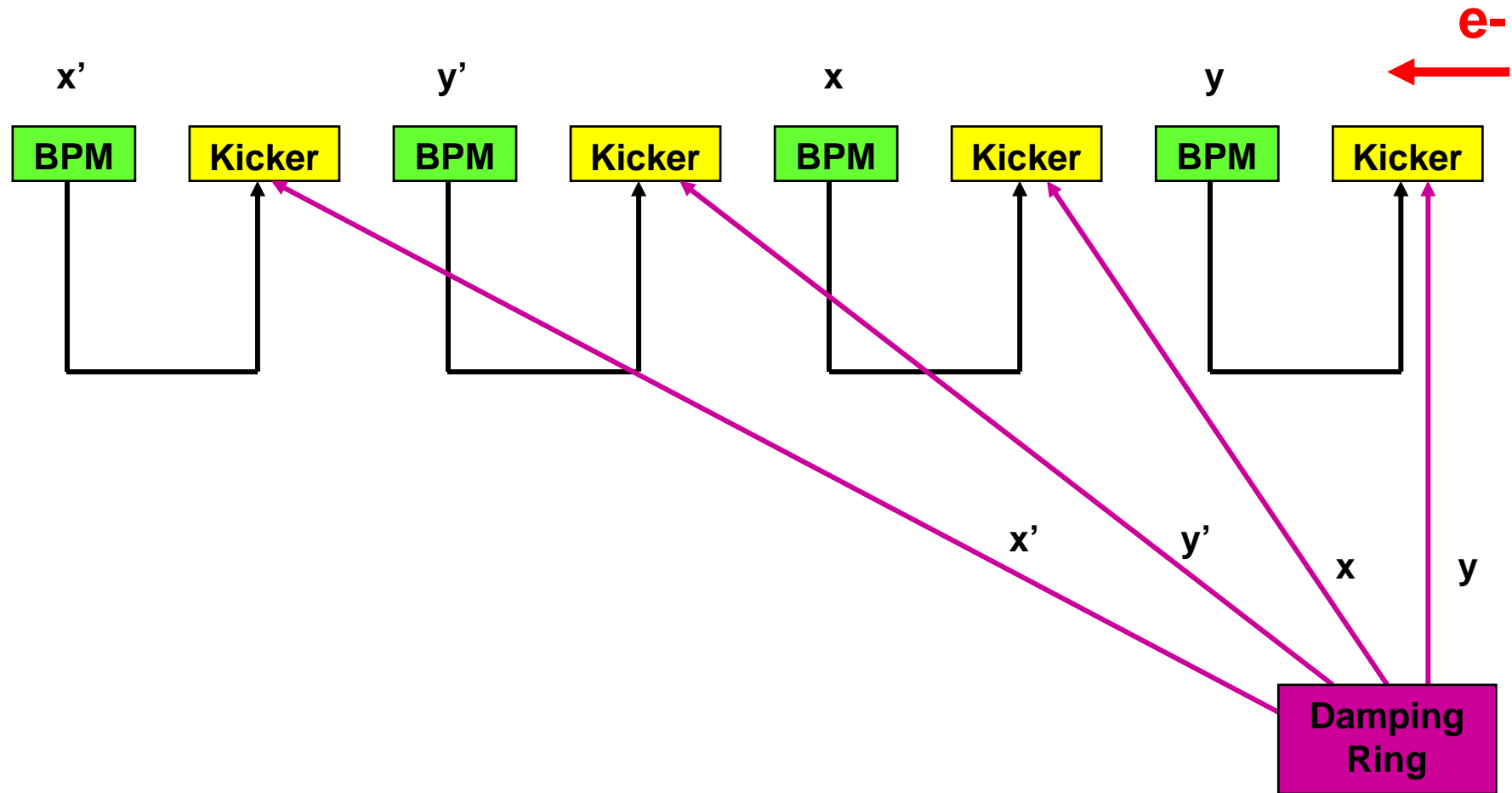


Schematic ATF2 feedback layout: 2

combined x-y kickers

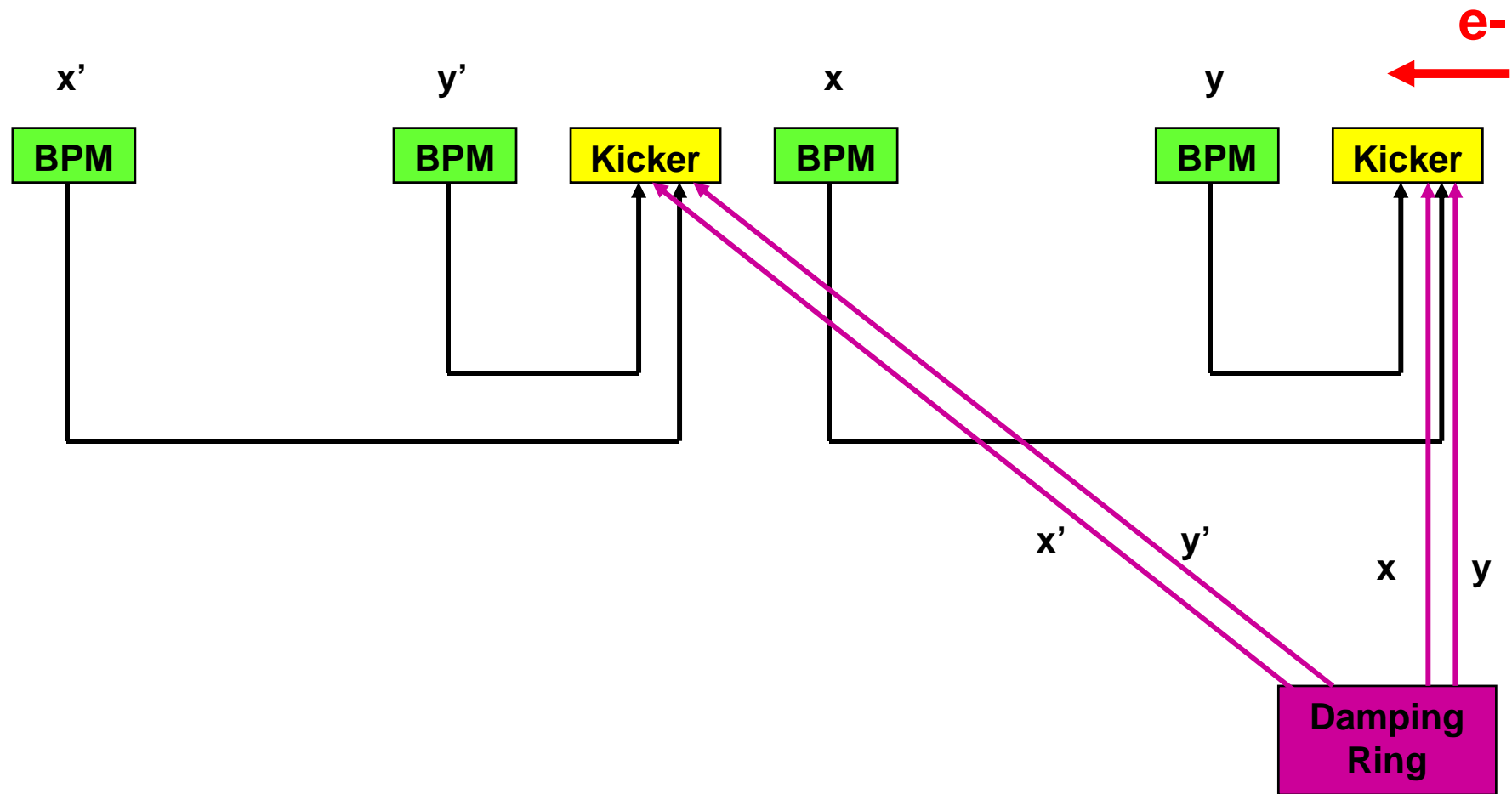


Schematic ATF2 feedforward layout: 1



Schematic ATF2 feedforward layout: 2

combined x-y kickers



Issues – for discussion

- **Start with y (+ y') FB system?**
- **Location of BPMs and kickers in extraction line:**
 - need appropriate $\text{Pi}/2$ phase differences between BPMs and kickers
- **BPMs:**
 - currently plan to use striplines
 - plan to improve resolution in 07/08 to c. 1 μm
- **Kicker design:**
 - FEATHER (adjustable gap) style very nice! Use for y
 - for additional kickers: use fixed-gap type
- **Details of feed-forward scheme**

Schedule

- Meeting **9 May 2007**: Urakawa, Tauchi, Burrows
- Until **June 2008**: optimise FONT4 system at ATF
- By ATF2 meeting **December 2007**:
define location of BPMs and kickers in extraction line,
specify kicker design
- By **mid 2008**: build kickers
- **2008 shutdown**: install BPMs + kickers in extraction line
- **October 2008**: ready to start commissioning with beam
- 3-bunch trains Ok at start
- Move to multibunch (20-60) trains when available

Proposal for ATF2: IP FB system

It would be prudent to plan for possible use of the IPBPM to drive an upstream kicker for correction of the beam position in y at the ATF2 final focus

Since the IPBPM program is in development, this would probably not be ready to try until much experience has been gained with the new final-focus

Suggestion:

identify and reserve space within the final focus for a kicker at the correct phase for y @ IP – it can be added when needed