

## 7.9 Some Questions

7.9.1

- Interference cancellation is very promising, but much remains unknown. Unfortunately, it is a collection of mathematical heuristics, so no best method to be derived.
- Some questions:
  - What about linearly dependent spreading codes? They will occur under heavy loading.
    - Decorrelators can't handle them without a boost from Rake/MRC. Can SIC or PIC?
    - If decorrelation is used as a first stage, can PIC or SIC recover?
  - What about model errors (timing, pulse shape etc) and channel estimation errors?
    - Existing papers show rapid deterioration of decorrelation with timing errors (to be covered in Section 8)
    - IC cancellation literature hasn't addressed the issue.
    - Effect of imperfect CSI on PPIC and constrained ML?

- Translation of the presented single-cell results to system capacity improvement?  
How close to the  $2\frac{1}{2}$  barrier?