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for scalability.	- Data structure design
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Translating our abstract scally onto hardware.
=> PDE solvers. What are the scaling limits?
PDE I want to solve that has Note that has (dots)
(dots) (sparmeter that we can cated by charging resolution. have a possible that the competer available.
Pas by as I cont.
If I can divide worth (N) by P, at that part should littp? (When does the efficiency domp below 80°6? 50°6).
How small can I make N without worthly too much P

Strong scaling problem: N fixed & P vones. Andahl model: To= fT1+(-f)T1 Where does this serial fraction of, one fram? 1. Unavoidably send pats A our code. og hordig configuration, or pritty sum-ary dats. => Typically can amortise this be couse for true-dep PDEs only need load costy once Con make His bij. chrip (seral) 2. Communication takes time. -> eg tro processes have to exchange information every trestep. say they need to exchange m bytes of data.

$$t(m) = \propto + \beta m$$

$$(s) \qquad [bytes]$$

$$[s/byte].$$

non-dimensionalité
relevant truèscale is how long it
takes to do rome carptatial wort.

> poblem-specifie

eg FD model, this time might be

has long to update 1 pait in the

gnid.

Lin, i

this ty

measure air u; j-1)

when the specs. I updates/s.

ty

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hope herdere

not.

Has long to send a message vs. how long to do some congrée? X, B: heed to know this for the possible programming library we're using. => measure. ping-pany mensvenerts. sard nessage back and forth. P1 = 72 This stands give nice dem date?

-> smetnes. hot's and wears this. Write sae prig pang conte -> When uplanded for with a without numpy.