Trygve 15.10.14

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Trenger L^1 kontraksjon

for $u_0 \in L^1 \cap \underline{L^\infty}$

$\Downarrow$

$L^\infty \ni u_{n,0} \longrightarrow u_0$ i L^1 [redacted]

$$\max_{t\in[0,T]} \int |u_n - u_m|(t) \leq \int |u_{n,0} - u_{m,0}|$$

Cauchy $\longleftarrow$ Cauchy i L^1

$\Rightarrow u_n \longrightarrow \tilde{u}$ i $L^1(Q_T)$

+ delfølge conv. a.e

Må sjekke at u er svak løsn.

(Har at u D'-løsn.)

$u_n \to u$ i L^1

$\int u_n \varphi_t = \int \varphi(u_n) \Delta \varphi$

$u_n \longrightarrow u$, $v_n \longrightarrow v$

$$\int |u_n - v_n|(t) \leq \int |u_{0,n} - v_{0,n}|$$

$$\int |u - v| \leq \underbrace{\int |u - u_n|}_{\to 0} + \underbrace{\int |u_n - v_n|}_{\leq \int |u_{0,n} - v_{0,n}|} + \underbrace{\int |v - v_n|}_{\to 0}$$

$$\leq \int |u_{0,n} - v_0| + |u_0 - v_0| + |v_{0,n} - v_0|$$