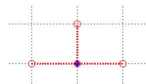
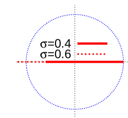
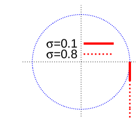
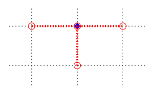
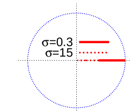
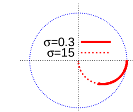
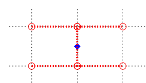
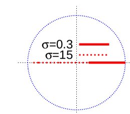
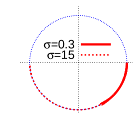
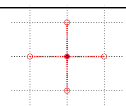
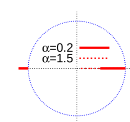
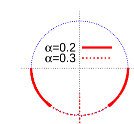
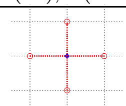
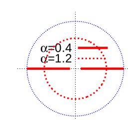
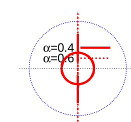
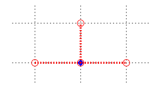
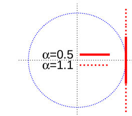
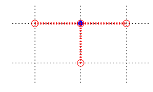
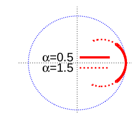
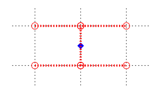
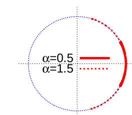
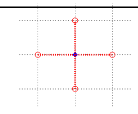
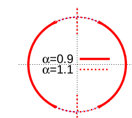
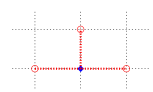
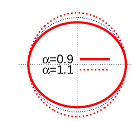
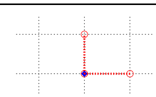
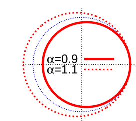
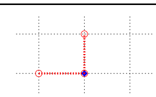
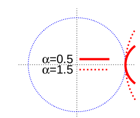
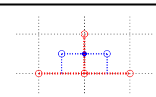
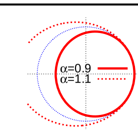
Tabulka 1.1: Tabulka diferenčních schémat pro difúzní rovnici $u_t = cu_{xx}$. V tabulce $\sigma = c\frac{\Delta t}{h^2}$, pro Schrödingerovu rovnici $\sigma = ic\frac{\Delta t}{h^2}$.

NÁZEV		DIF. FORMULE	FAKTOR ZESÍLENÍ	STABILITA	STABILITA (SR)
Expl. Euler (EE)	 $O(h^2), O(\Delta t)$	$v_j^{n+1} = v_j^n + \sigma(v_{j+1}^n - 2v_j^n + v_{j-1}^n)$	$g = 1 + 2\sigma(\cos\kappa - 1)$	 $\sigma \leq \frac{1}{2}$	 Ne
Impl. Euler (IE)	 $O(h^2), O(\Delta t)$	$v_j^{n+1} = v_j^n + \sigma(v_{j+1}^{n+1} - 2v_j^{n+1} + v_{j-1}^{n+1})$	$g = \dfrac{1}{1 - 2\sigma(\cos\kappa - 1)}$	 Ano	 Ano
Crank-Nicolsonová (CN)	 $O(h^2), O(\Delta t^2)$	$v_j^{n+1} = v_j^n + \frac{\sigma}{2}(v_{j+1}^n - 2v_j^n + v_{j-1}^n + v_{j+1}^{n+1} - 2v_j^{n+1} + v_{j-1}^{n+1})$	$g = \dfrac{1 + \sigma(\cos\kappa - 1)}{1 - \sigma(\cos\kappa - 1)}$	 Ano	 Ano
Leap Frog (LF)	 $O(h^2), O(\Delta t^2)$	$v_j^{n+1} = v_j^{n-1} + 2\sigma(v_{j+1}^n - 2v_j^n + v_{j-1}^n)$	$G = \begin{pmatrix} 4\sigma(\cos\kappa - 1) & 1 \\ 1 & 0 \end{pmatrix}$	 Ne	 $\sigma < \frac{1}{4}$
DuFort-Frankel (DF)	 $O(h^2), O(\Delta t^2)$	$v_j^{n+1} = v_j^{n-1} + 2\sigma(v_{j+1}^n - v_j^{n-1} - v_j^{n+1} + v_{j-1}^n)$	$G = \begin{pmatrix} \frac{4\sigma\cos\kappa}{1+2\sigma} & \frac{1-2\sigma}{1+2\sigma} \\ 1 & 0 \end{pmatrix}$	 Ano?	 $\sigma < 0.5?$
Box	$O(?)$ $O(\Delta t?)$	$v_j^{n+1} = v_j^n + \ldots$	$g = \ldots$		Ne
CN4	$O(h?)$ $O(\Delta t?)$	$v_j^{n+1} = v_j^n + \ldots$	$g = \ldots$		Ne

Tabulka 1.2: Tabulka možných diferenčních schémat pro advekci $u_t = cu_x$, používáme zkratku $\alpha = c\frac{\Delta t}{h}$.

NÁZEV		DIF. FORMULE	FAKTOR ZESÍLENÍ	STABILITA	
Expl. Euler (EE)	 $O(h^2), O(\Delta t)$	$v_j^{n+1} = v_j^n + \frac{\alpha}{2}(v_{j+1}^n - v_{j-1}^n)$	$g = 1 + i\alpha \sin\kappa$		Ne
Impl. Euler (IE)	 $O(h^2), O(\Delta t)$	$v_j^{n+1} = v_j^n + \frac{\alpha}{2}(v_{j+1}^{n+1} - v_{j-1}^{n+1})$	$g = \dfrac{1}{1 - i\alpha \sin\kappa}$		Ano
Crank-Nicolsonová (CN)	 $O(h^2), O(\Delta t^2)$	$v_j^{n+1} = v_j^n + \frac{\alpha}{4}(v_{j+1}^n - v_{j-1}^n + v_{j+1}^{n+1} - v_{j-1}^{n+1})$	$g = \dfrac{2 + i\alpha \sin\kappa}{2 - i\alpha \sin\kappa}$		Ano
Leap Frog (LF)	 $O(h^2), O(\Delta t^2)$	$v_j^{n+1} = v_j^{n-1} + \alpha(v_{j+1}^n - v_{j-1}^n)$	$G = \begin{pmatrix} 2i\alpha \sin\kappa & 1 \\ 1 & 0 \end{pmatrix}$		$\alpha < 1$
Lax-Friedrichs (LXF)	 $O(h^2), O(\Delta t)$	$v_j^{n+1} = \frac{1}{2}(v_{j+1}^n + v_{j-1}^n) + \frac{\alpha}{2}(v_{j+1}^n - v_{j-1}^n)$	$g = \cos\kappa + i\alpha \sin\kappa$		$\alpha \leq 1$
Upwind (UW)	 $O(h), O(\Delta t)$	$v_j^{n+1} = v_j^n + \alpha(v_{j+1}^n - v_j^n)$	$g = 1 + \alpha(e^{i\kappa} - 1)$		$\alpha \leq 1$
Downwind (DW)	 $O(h), O(\Delta t)$	$v_j^{n+1} = v_j^n + \alpha(v_j^n - v_{j-1}^n)$	$g = 1 + \alpha(1 - e^{-i\kappa})$		Ne
Lax-Wendroff (LW)	 $O(h^2), O(\Delta t^2)$	$v_j^{n+1} = v_j^n + \frac{\alpha}{2}(v_{j+1}^n - v_{j-1}^n) + \frac{1}{2}\alpha^2(v_{j+1}^n - 2v_j^n + v_{j-1}^n)$	$g = 1 + i\alpha \sin\kappa + \alpha^2(\cos\kappa - 1)$		$\alpha \leq 1$