To: **WBF Finite Difference Course Participants**
Fr: **Jesper Andreasen**
St: **Level 2**
Dt: **10 May 2023**

Agenda

Using the functions xFd1d() and xBachelierFd() we will consider properties of finite difference solution and verify these by numerical experiments.

The numerical experiments are described in the article 'fun with fd'.

We will primarily be using the spreadsheet 'fun with fd.xlsx' for this.

To Do

1/ Keeping Δx constant use the sheet 'grid width' to test the impact of widening the grid on an option priced in xFd1d().

2/ Using the sheet 'transform' consider the effect of using log transform or not in the Black model.

3/ Verify the effect of moving the strike without aligning the grid. Use the sheet 'non-smooth'.

4/ Test stability behaviour of the explicit, the implicit and Crank-Nicolson schemes using the sheets 'explicit', 'implicit 1' and 'implicit 2' in 'fun with fd.xlsx'.

5/ Flick the configuration from debug to release and test speed using the sheet 'speed'.

6/ Consider the 'Finite Difference Cheat Sheet'.