

Taylor Polynom Plot

/home/admin/MasterArbeit/code/plots/taylor_degree_test.png

Graph

This Gives the result in the plot for one loop

```
SDOUBLE x    = LOAD_DOUBLE_VEC(&input[i]);
const SDOUBLE centered_values = SUB_DOUBLE_S(x, center_point);
SDOUBLE result = LOAD_DOUBLE(TAYLOR_COEFF_SIN[taylor_last_coeff]);

for (int j = taylor_loop_iteration; j >= 0; --j) {
    SDOUBLE coeff = LOAD_DOUBLE(TAYLOR_COEFF_SIN[j]);
    result = MUL_DOUBLE_S(result, centered_values);
    result = ADD_DOUBLE_S(result, coeff);
}

SIMD_TO_DOUBLE_VEC(&res[i], result);
```

This gives the results in the plot for two loops:

```
SDOUBLE x    = LOAD_DOUBLE_VEC(&input[i]);
const SDOUBLE centered_values = SUB_DOUBLE_S(x, center_point);
SDOUBLE result = LOAD_DOUBLE(TAYLOR_COEFF_SIN[taylor_last_coeff]);

for (int j = taylor_loop_iteration; j >= 0; --j) {
    SDOUBLE coeff = LOAD_DOUBLE(TAYLOR_COEFF_SIN[j]);
    result = MUL_DOUBLE_S(result, centered_values);
    result = ADD_DOUBLE_S(result, coeff);
}

const SDOUBLE centered_values1 = SUB_DOUBLE_S(x, center_point);
SDOUBLE result1 = LOAD_DOUBLE(TAYLOR_COEFF_SIN[taylor_last_coeff]);

for (int j = taylor_loop_iteration; j >= 0; --j) {
    SDOUBLE coeff = LOAD_DOUBLE(TAYLOR_COEFF_SIN[j]);
    result1 = MUL_DOUBLE_S(result1, centered_values1);
    result = ADD_DOUBLE_S(result1, coeff);
}
SIMD_TO_DOUBLE_VEC(&res[i], result);
```