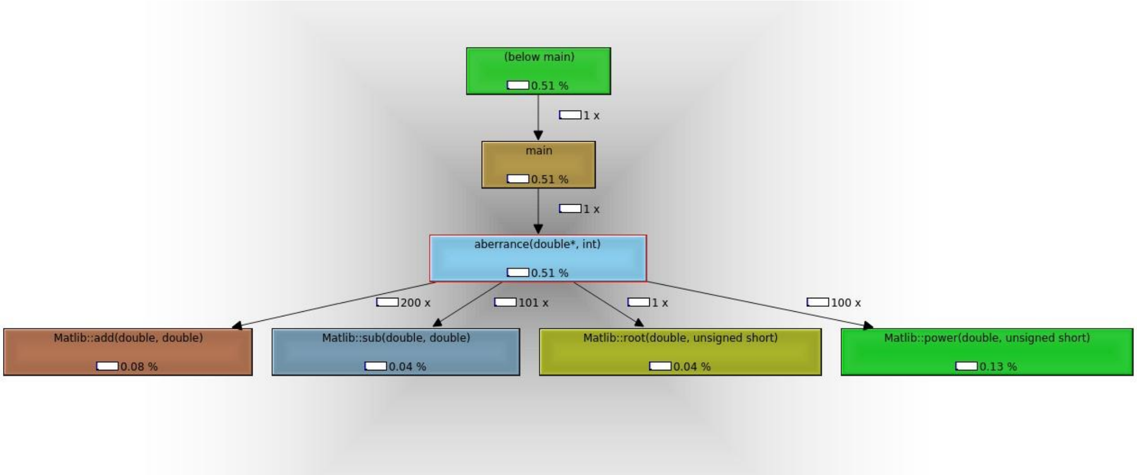
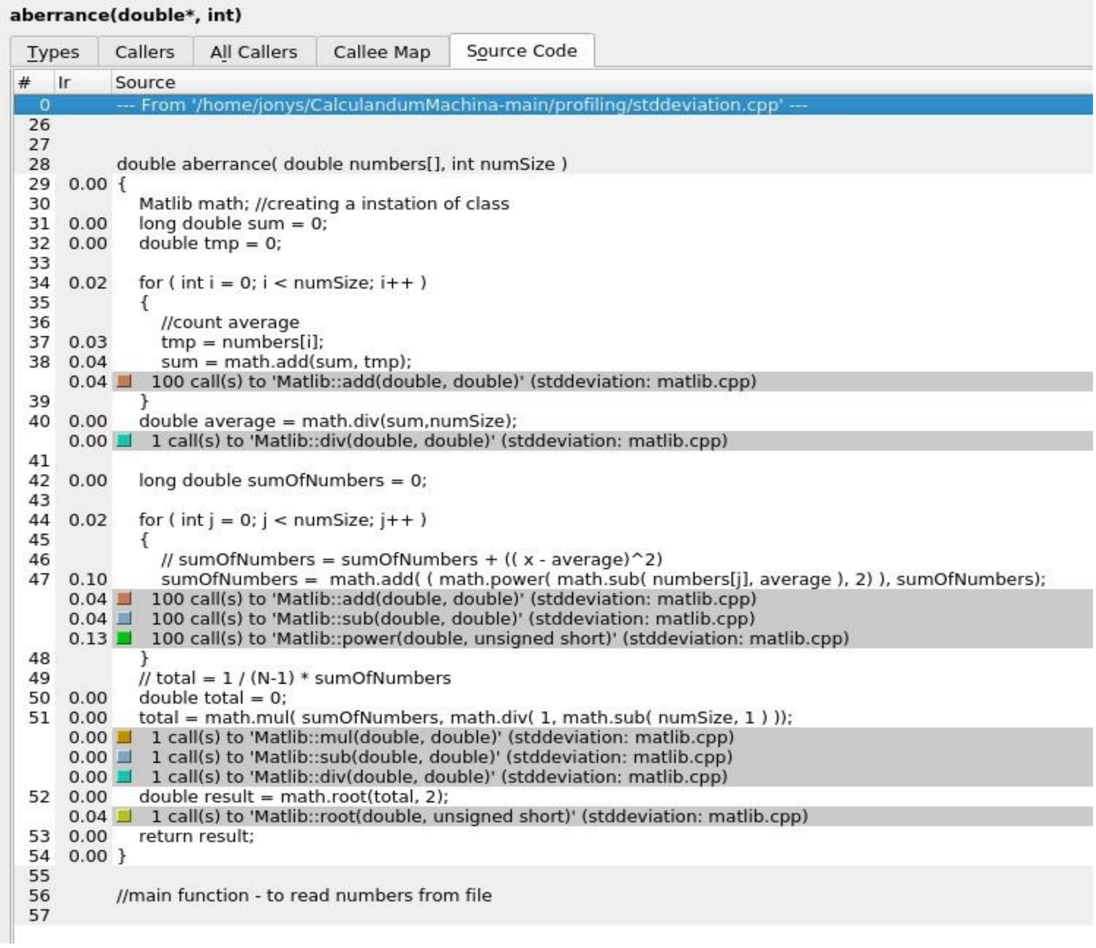
## Výstup pro 100 čísel:


(below main)
0.51 %
1 x
main
0.51 %
1 x
aberrance(double*, int)
0.51 %
200 x
101 x
1 x
100 x
Matlib::add(double, double)
0.08 %
Matlib::sub(double, double)
0.04 %
Matlib::root(double, unsigned short)
0.04 %
Matlib::power(double, unsigned short)
0.13 %

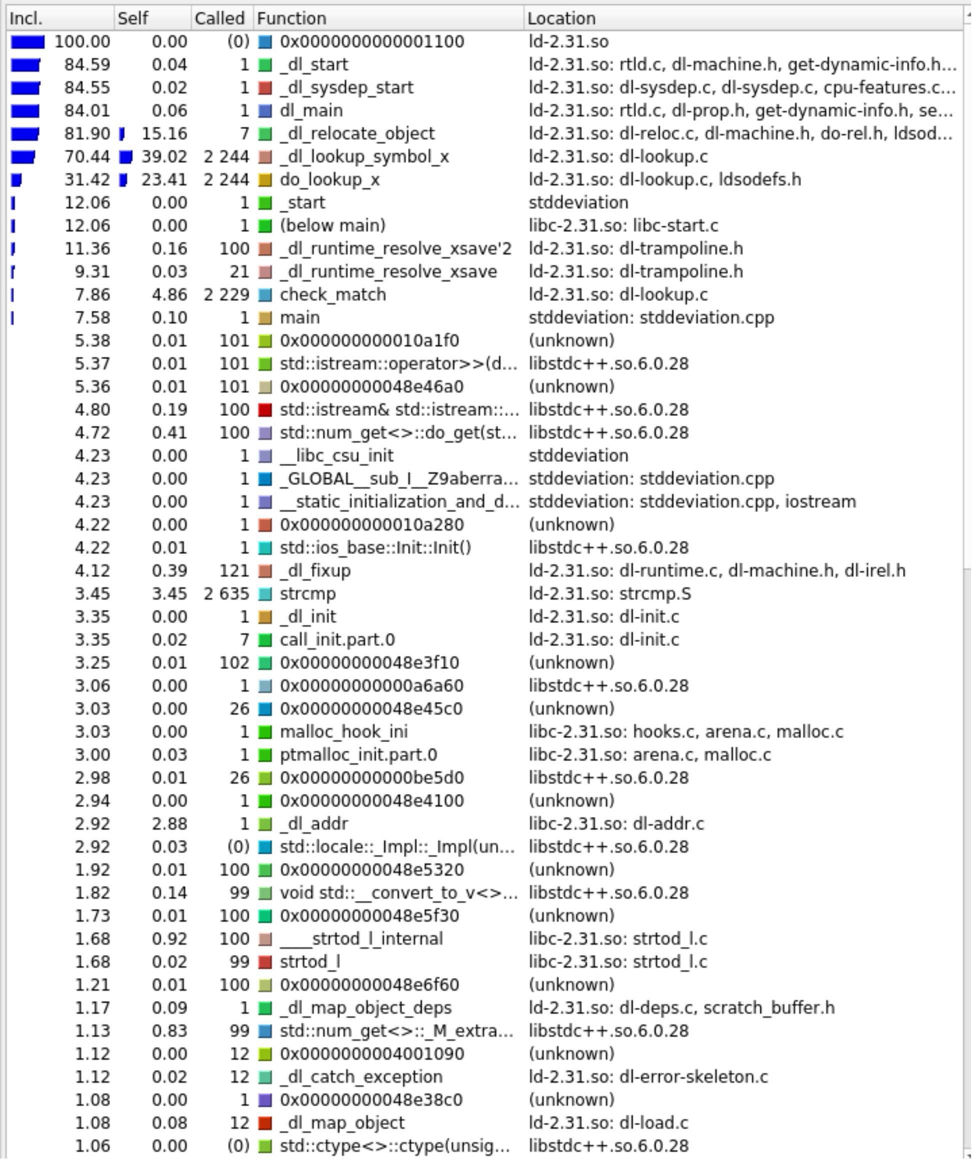
*1 - graf volání funkcí z matlib.h*



**aberrance(double*, int)**

```
 #   Ir     Source
 0          --- From '/home/jonys/CalculandumMachina-main/profiling/stddeviation.cpp' ---
26
27
28          double aberrance( double numbers[], int numSize )
29   0.00   {
30             Matlib math; //creating a instation of class
31   0.00      long double sum = 0;
32   0.00      double tmp = 0;
33
34   0.02      for ( int i = 0; i < numSize; i++ )
35             {
36                //count average
37   0.03         tmp = numbers[i];
38   0.04         sum = math.add(sum, tmp);
     0.04   ■  100 call(s) to 'Matlib::add(double, double)' (stddeviation: matlib.cpp)
39             }
40   0.00      double average = math.div(sum,numSize);
     0.00   ■  1 call(s) to 'Matlib::div(double, double)' (stddeviation: matlib.cpp)
41
42   0.00      long double sumOfNumbers = 0;
43
44   0.02      for ( int j = 0; j < numSize; j++ )
45             {
46                // sumOfNumbers = sumOfNumbers + (( x - average)^2)
47   0.10         sumOfNumbers =  math.add( ( math.power( math.sub( numbers[j], average ), 2) ), sumOfNumbers);
     0.04   ■  100 call(s) to 'Matlib::add(double, double)' (stddeviation: matlib.cpp)
     0.04   ■  100 call(s) to 'Matlib::sub(double, double)' (stddeviation: matlib.cpp)
     0.13   ■  100 call(s) to 'Matlib::power(double, unsigned short)' (stddeviation: matlib.cpp)
48             }
49             // total = 1 / (N-1) * sumOfNumbers
50   0.00      double total = 0;
51   0.00      total = math.mul( sumOfNumbers, math.div( 1, math.sub( numSize, 1 ) ));
     0.00   ■  1 call(s) to 'Matlib::mul(double, double)' (stddeviation: matlib.cpp)
     0.00   ■  1 call(s) to 'Matlib::sub(double, double)' (stddeviation: matlib.cpp)
     0.00   ■  1 call(s) to 'Matlib::div(double, double)' (stddeviation: matlib.cpp)
52   0.00      double result = math.root(total, 2);
     0.04   ■  1 call(s) to 'Matlib::root(double, unsigned short)' (stddeviation: matlib.cpp)
53   0.00      return result;
54   0.00   }
55
56          //main function - to read numbers from file
57
```

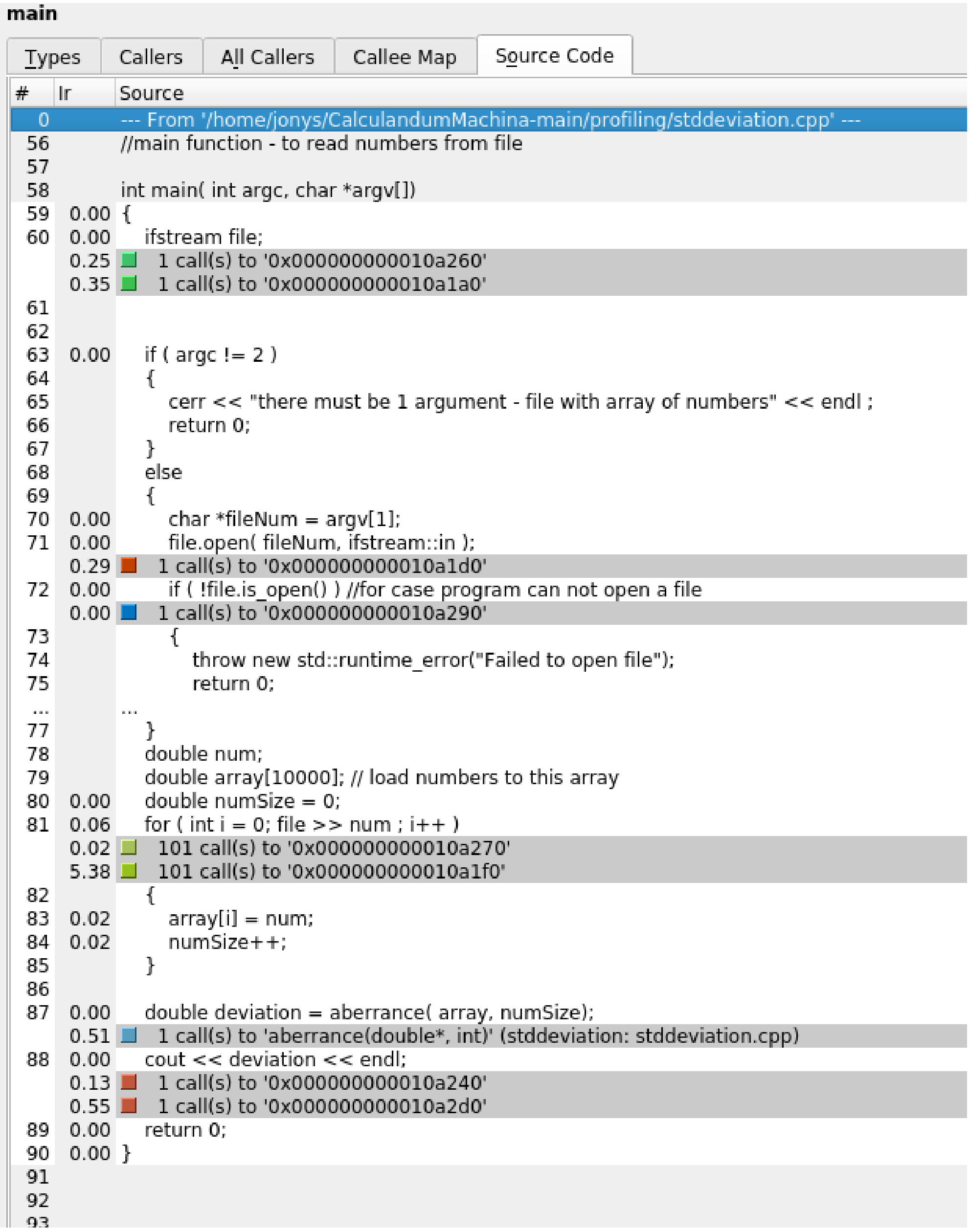
*2 - detail volání funkcí z matlib.h zobrazený v kódu*



| Incl. | Self | Called | Function | Location |
|---|---|---|---|---|
| 100.00 | 0.00 | (0) | 0x0000000000001100 | ld-2.31.so |
| 84.59 | 0.04 | 1 | _dl_start | ld-2.31.so: rtld.c, dl-machine.h, get-dynamic-info.h… |
| 84.55 | 0.02 | 1 | _dl_sysdep_start | ld-2.31.so: dl-sysdep.c, dl-sysdep.c, cpu-features.c… |
| 84.01 | 0.06 | 1 | dl_main | ld-2.31.so: rtld.c, dl-prop.h, get-dynamic-info.h, se… |
| 81.90 | 15.16 | 7 | _dl_relocate_object | ld-2.31.so: dl-reloc.c, dl-machine.h, do-rel.h, ldsod… |
| 70.44 | 39.02 | 2 244 | _dl_lookup_symbol_x | ld-2.31.so: dl-lookup.c |
| 31.42 | 23.41 | 2 244 | do_lookup_x | ld-2.31.so: dl-lookup.c, ldsodefs.h |
| 12.06 | 0.00 | 1 | _start | stddeviation |
| 12.06 | 0.00 | 1 | (below main) | libc-2.31.so: libc-start.c |
| 11.36 | 0.16 | 100 | _dl_runtime_resolve_xsave'2 | ld-2.31.so: dl-trampoline.h |
| 9.31 | 0.03 | 21 | _dl_runtime_resolve_xsave | ld-2.31.so: dl-trampoline.h |
| 7.86 | 4.86 | 2 229 | check_match | ld-2.31.so: dl-lookup.c |
| 7.58 | 0.10 | 1 | main | stddeviation: stddeviation.cpp |
| 5.38 | 0.01 | 101 | 0x000000000010a1f0 | (unknown) |
| 5.37 | 0.01 | 101 | std::istream::operator>>(d… | libstdc++.so.6.0.28 |
| 5.36 | 0.01 | 101 | 0x00000000048e46a0 | (unknown) |
| 4.80 | 0.19 | 100 | std::istream& std::istream::… | libstdc++.so.6.0.28 |
| 4.72 | 0.41 | 100 | std::num_get<>::do_get(st… | libstdc++.so.6.0.28 |
| 4.23 | 0.00 | 1 | __libc_csu_init | stddeviation |
| 4.23 | 0.00 | 1 | _GLOBAL__sub_I__Z9aberra… | stddeviation: stddeviation.cpp |
| 4.23 | 0.00 | 1 | __static_initialization_and_d… | stddeviation: stddeviation.cpp, iostream |
| 4.22 | 0.00 | 1 | 0x000000000010a280 | (unknown) |
| 4.22 | 0.01 | 1 | std::ios_base::Init::Init() | libstdc++.so.6.0.28 |
| 4.12 | 0.39 | 121 | _dl_fixup | ld-2.31.so: dl-runtime.c, dl-machine.h, dl-irel.h |
| 3.45 | 3.45 | 2 635 | strcmp | ld-2.31.so: strcmp.S |
| 3.35 | 0.00 | 1 | _dl_init | ld-2.31.so: dl-init.c |
| 3.35 | 0.02 | 7 | call_init.part.0 | ld-2.31.so: dl-init.c |
| 3.25 | 0.01 | 102 | 0x00000000048e3f10 | (unknown) |
| 3.06 | 0.00 | 1 | 0x00000000000a6a60 | libstdc++.so.6.0.28 |
| 3.03 | 0.00 | 26 | 0x00000000048e45c0 | (unknown) |
| 3.03 | 0.00 | 1 | malloc_hook_ini | libc-2.31.so: hooks.c, arena.c, malloc.c |
| 3.00 | 0.03 | 1 | ptmalloc_init.part.0 | libc-2.31.so: arena.c, malloc.c |
| 2.98 | 0.01 | 26 | 0x00000000000be5d0 | libstdc++.so.6.0.28 |
| 2.94 | 0.00 | 1 | 0x00000000048e4100 | (unknown) |
| 2.92 | 2.88 | 1 | _dl_addr | libc-2.31.so: dl-addr.c |
| 2.92 | 0.03 | (0) | std::locale::_Impl::_Impl(un… | libstdc++.so.6.0.28 |
| 1.92 | 0.01 | 100 | 0x00000000048e5320 | (unknown) |
| 1.82 | 0.14 | 99 | void std::__convert_to_v<>… | libstdc++.so.6.0.28 |
| 1.73 | 0.01 | 100 | 0x00000000048e5f30 | (unknown) |
| 1.68 | 0.92 | 100 | ____strtod_l_internal | libc-2.31.so: strtod_l.c |
| 1.68 | 0.02 | 99 | strtod_l | libc-2.31.so: strtod_l.c |
| 1.21 | 0.01 | 100 | 0x00000000048e6f60 | (unknown) |
| 1.17 | 0.09 | 1 | _dl_map_object_deps | ld-2.31.so: dl-deps.c, scratch_buffer.h |
| 1.13 | 0.83 | 99 | std::num_get<>::_M_extra… | libstdc++.so.6.0.28 |
| 1.12 | 0.00 | 12 | 0x0000000004001090 | (unknown) |
| 1.12 | 0.02 | 12 | _dl_catch_exception | ld-2.31.so: dl-error-skeleton.c |
| 1.08 | 0.00 | 1 | 0x00000000048e38c0 | (unknown) |
| 1.08 | 0.08 | 12 | _dl_map_object | ld-2.31.so: dl-load.c |
| 1.06 | 0.00 | (0) | std::ctype<>::ctype(unsig… | libstdc++.so.6.0.28 |

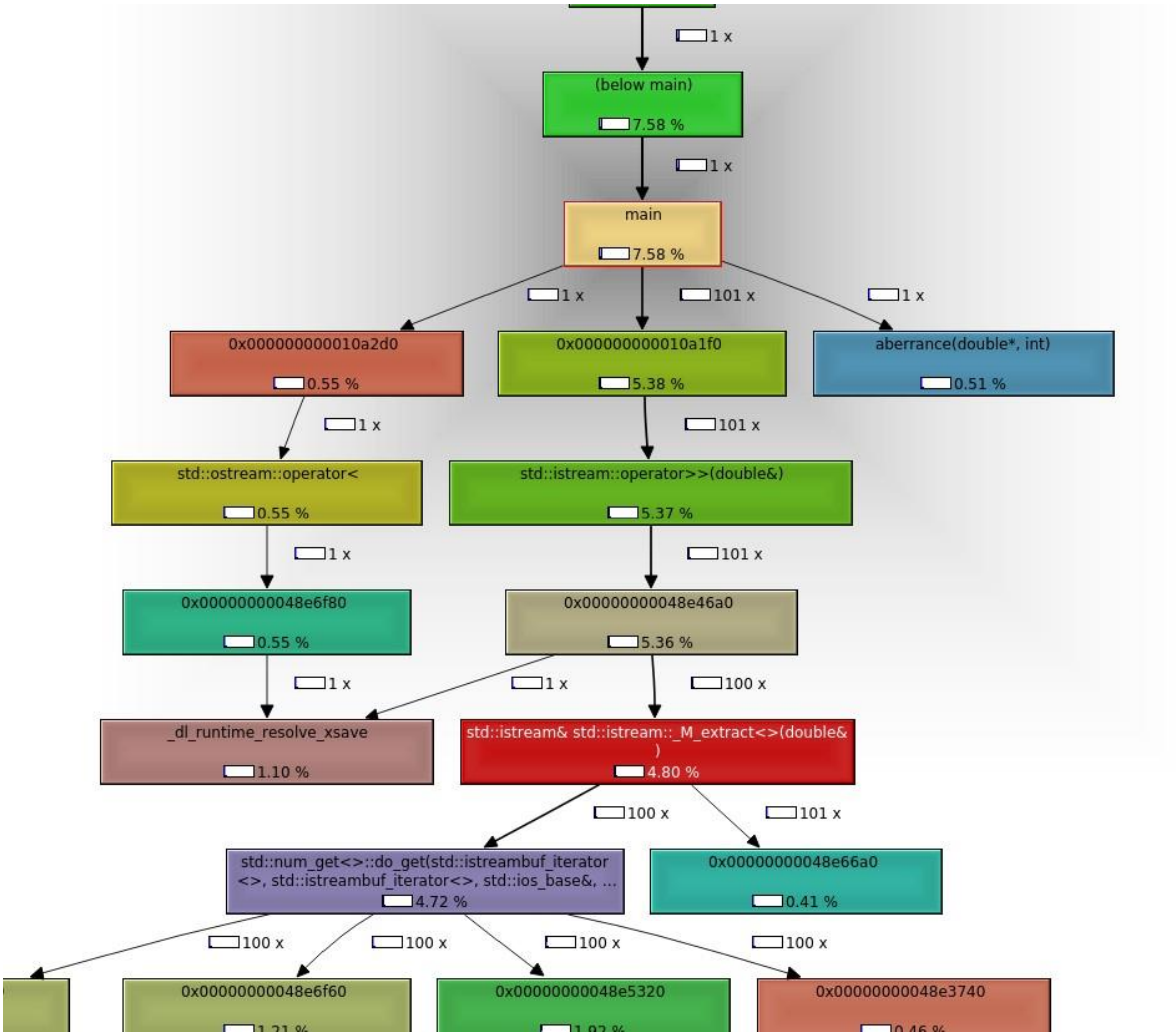
3

*3- přehled všech běžících procesů*



```
 #   Ir    Source
  0        --- From '/home/jonys/CalculandumMachina-main/profiling/stddeviation.cpp' ---
 56        //main function - to read numbers from file
 57
 58        int main( int argc, char *argv[])
 59  0.00  {
 60  0.00     ifstream file;
     0.25  🟩  1 call(s) to '0x000000000010a260'
     0.35  🟩  1 call(s) to '0x000000000010a1a0'
 61
 62
 63  0.00     if ( argc != 2 )
 64           {
 65              cerr << "there must be 1 argument - file with array of numbers" << endl ;
 66              return 0;
 67           }
 68           else
 69           {
 70  0.00        char *fileNum = argv[1];
 71  0.00        file.open( fileNum, ifstream::in );
     0.29  🟥  1 call(s) to '0x000000000010a1d0'
 72  0.00        if ( !file.is_open() ) //for case program can not open a file
     0.00  🟦  1 call(s) to '0x000000000010a290'
 73              {
 74                 throw new std::runtime_error("Failed to open file");
 75                 return 0;
 ...       ...
 77           }
 78           double num;
 79           double array[10000]; // load numbers to this array
 80  0.00     double numSize = 0;
 81  0.06     for ( int i = 0; file >> num ; i++ )
     0.02  🟩  101 call(s) to '0x000000000010a270'
     5.38  🟩  101 call(s) to '0x000000000010a1f0'
 82           {
 83  0.02        array[i] = num;
 84  0.02        numSize++;
 85           }
 86
 87  0.00     double deviation = aberrance( array, numSize);
     0.51  🟦  1 call(s) to 'aberrance(double*, int)' (stddeviation: stddeviation.cpp)
 88  0.00     cout << deviation << endl;
     0.13  🟥  1 call(s) to '0x000000000010a240'
     0.55  🟥  1 call(s) to '0x000000000010a2d0'
 89  0.00     return 0;
 90  0.00  }
 91
 92
 93
```

*4- přehled běžících procesů v main*



*5- přehled všech běžících procesů znázorněný v grafu*