

Macros abstracting  
memory region decorators  
(\_\_global, \_\_private, etc.)

void NS(DriftExact\_track\_particle) (  
SIXTRL\_PARTICLE\_ARGPTR\_DEC NS(Particle)\* SIXTRL\_RESTRICT p,  
SIXTRL\_BE\_ARGPTR\_DEC const NS(DriftExact) \*const  
SIXTRL\_RESTRICT drift ) SIXTRL\_NOEXCEPT  
{  
/\* Note: Signature & particle type changed  
due to optimisation a) \*/  
typedef NS(particle\_real\_type) real\_type;  
  
#if defined( \_\_cplusplus )  
using std::sqrt; /\* ADL \*/  
#endif /\* defined( \_\_cplusplus ) \*/  
  
real\_type const length = NS(DriftExact\_length)( drift );  
real\_type const one\_plus\_delta =  
NS(Particle\_delta)( p ) + ( real\_type )1.;  
real\_type lpzi = one\_plus\_delta \* one\_plus\_delta -  
NS(Particle\_px)( p ) \* NS(Particle\_px)( p ) -  
NS(Particle\_py)( p ) \* NS(Particle\_py)( p );  
  
SIXTRL\_ASSERT( p != SIXTRL\_NULLPTR );  
SIXTRL\_ASSERT( drift != SIXTRL\_NULLPTR );  
SIXTRL\_ASSERT( lpzi > ( real\_type )0. );  
  
lpzi = length / sqrt( lpzi );  
  
NS(Particle\_add\_to\_x)( p, NS(Particle\_px)( p ) \* lpzi );  
NS(Particle\_add\_to\_y)( p, NS(Particle\_py)( p ) \* lpzi );  
NS(Particle\_add\_to\_s)( p, length );  
NS(Particle\_add\_to\_zeta)( p, NS(Particles\_rvv)( p ) \* length -  
one\_plus\_delta \* lpzi );  
  
NS(Particle\_increment\_at\_element)( p ); /\* Cf. b) \*/  
}

Resolution of sqrt  
like before for C++

Reduce the numbers of locally  
stored expr. relying on p.px, p.py  
being in thread-local memory

Consistency Checks ->  
Disabled / NO-OP  
in Release Mode

Update attributes for p

Macros abstracting  
language features