

## Programmability

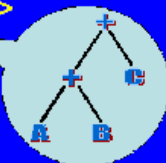
C++

Object - Oriented  
Programming  
Language

## Mechanization

<PETE>

Portable  
Expression  
Template  
Engine



Reduction  
Semantics

Psi - Calculus

Generalized  
Array Indexing

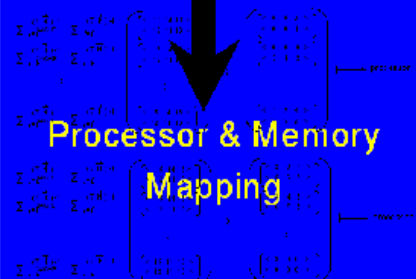
## Performance

Efficient Loops

Compile Time  
Loop  
Translation

Processor & Memory

Mapping



Operations

shift  
take  
rotate

## Array.h

```
template<class T, class... Args>
class Array {
...
public:
    template<class K1, K2>
    Array Operator (const LExpression<K1, K2> &rhs)
    {
        for(long i=0; i<this->size; i++)
            d[i] = lhs[i] + rhs[i]; // Op.Combine();
        return *this; // equivalent to: a.d[i] = b.d[i] + c.d[i] + d.d[i]
    }
...
private:
    T * d;
    vector<int> shape;
    long size;
}
```

## Array.h

integrates  
with  
<PETE>

Psi-Calculus  
platform

N - dimensional capability

( required for processor /  
memory mapping )

## Array.h

Results : Comparable to Hand Coded C

