PBblas/

gemm

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DESCRIPTIONS

FUNCTION gemm

DATASET(Layout_Cell)	**gemm**
(BOOLEAN transposeA, BOOLEAN transposeB, value_t alpha, DATASET(Layout_Cell) A_in, DATASET(Layout_Cell) B_in, DATASET(Layout_Cell) C_in=emptyC, value_t beta=0.0)	

Extended Parallel Block Matrix Multiplication Module Implements: Result = alpha * op(A)op(B) + beta * C. op is No Transpose or Transpose. Multiplies two matrixes A and B, with an optional pre-multiply transpose for each Optionally scales the product by the scalar "alpha". Then adds an optional C matrix to the product after scaling C by the scalar "beta". A, B, and C are specified as DATASET(Layout_Cell), as is the Resulting matrix. Layout_Cell describes a sparse matrix stored as a list of x, y, and value. This interface also provides a "Myriad" capability allowing multiple similar operations to be performed on independent sets of matrixes in parallel. This is done by use of the work-item id (wi_id) in each cell of the matrixes. Cells with the same wi_id are considered part of the same matrix. In the myriad form, each input matrix A, B, and (optionally) C can contain many independent matrixes. The wi_ids are matched up such that each operation involves the A, B, and C with the same wi_id. A and B must therefore contain the same set of wi_ids, while C is optional for any wi_id. The same parameters: alpha, beta, transposeA, and transposeB are used for all work-items. The result will contain cells from all provided work-items. Result has same shape as C if provided. Note that matrixes are not explicitly

dimensioned. The shape is determined by the highest value of x and y for each work-item.

PARAMETER **transposeA** Boolean indicating whether matrix A should be transposed before multiplying

PARAMETER **transposeB** Same as above but for matrix B

PARAMETER **alpha** Scalar multiplier for alpha * A * B

PARAMETER **A_in** 'A' matrix (multiplier) in Layout_Cell format

PARAMETER **B_in** Same as above for the 'B' matrix (multiplicand)

PARAMETER **C_in** Same as above for the 'C' matrix (addend). May be omitted.

PARAMETER **beta** A scalar multiplier for beta * C, scales the C matrix before addition. May be omitted.

RETURN Result matrix in Layout_Cell format.

SEE PBblas/Types.Layout_Cell
