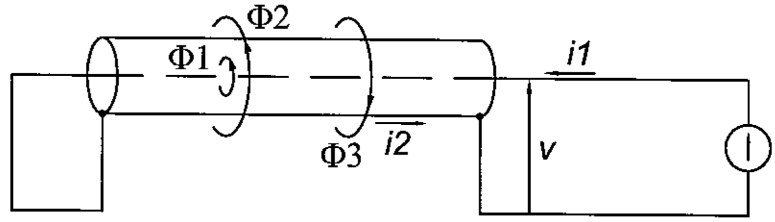
REV	REVISION NOTE	DATE	BY	CHKED

Fig. 1



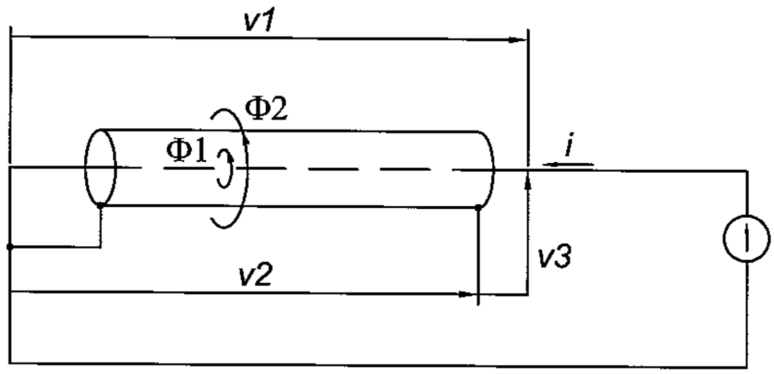
Since i1 = i2 with opposite direction, induced magnetic flux also $\Phi 2 = \Phi 3$ with oppsite direction. Thus $\Phi 2$ and $\Phi 3$ will cancell out the magetic flux external to the shield. This results only the flux internal to the shield $\Phi 1$ will link to the circuit.

Thus, $v = d\Phi 1 / dt$ and $L = \Phi 1 / i1$ or $\Phi 1 = L^* i1$

$v = d(L^*i1)/dt = L(di1/dt)$

Therefore, $L = v\ (dt/di1)$

Fig. 2



Interestingly, this wiring in Fig.2 will give us the same result as Fig.1 , even there is no current in the shield.

$v1 = (\ d\Phi 1 + d\Phi 2)/dt = d\Phi 1/dt\ + d\Phi 2/dt$
$v2 = d\Phi 2/dt$

Therefore,
$v3 = v1 - v2 = d\Phi 1/dt\ + d\Phi 2/dt - d\Phi 2/dt = d\Phi 1/dt$
$L = v3(dt/di)$

Also
$v3 = L^*(di/dt)$ and $L = \Phi 1/i$

NO	Q'TY	ITEM			REFERENCE	
DESIGNED BY AS		CHECKED BY AS	APPROVED BY N/A	FILE NAME CoaxInduct1	DATE 13 DEC 02	SCALE N/A
N/A			TITLE INDUCTANCE & FLUX ON COAXIAL CABLE			
PT. ANI INTERNASIONAL			DWG. NO. COAXINDUCT1		REV 0	SHT 1
						CONT SHT