Target equation:

$$-ia_1u^{(1,0)}(x,t)+a_{10}u^{(10,0)}(x,t)-ia_{11}u^{(11,0)}(x,t)+a_{12}u^{(12,0)}(x,t)-ia_{13}u^{(13,0)}(x,t)+a_{14}u^{(14,0)}(x,t)-$$
$$ia_{15}u^{(15,0)}(x,t)+a_{16}u^{(16,0)}(x,t)-ia_{17}u^{(17,0)}(x,t)+a_{18}u^{(18,0)}(x,t)-ia_{19}u^{(19,0)}(x,t)+a_2u^{(2,0)}(x,t)+$$
$$a_{20}u^{(20,0)}(x,t)-ia_{21}u^{(21,0)}(x,t)+a_{22}u^{(22,0)}(x,t)-ia_{23}u^{(23,0)}(x,t)+a_{24}u^{(24,0)}(x,t)-ia_{25}u^{(25,0)}(x,t)+$$
$$a_{26}u^{(26,0)}(x,t)-ia_{27}u^{(27,0)}(x,t)+a_{28}u^{(28,0)}(x,t)-ia_3u^{(3,0)}(x,t)+a_4u^{(4,0)}(x,t)-ia_5u^{(5,0)}(x,t)+$$
$$a_6u^{(6,0)}(x,t)-ia_7u^{(7,0)}(x,t)+a_8u^{(8,0)}(x,t)-ia_9u^{(9,0)}(x,t)-bu(x,t)\left|u(x,t)\right|^2+iu^{(0,1)}(x,t)=0$$

Substitutions:

$$\mathrm{N}=14$$
$$u(x,t)\to y(z)e^{i(kx-\omega t)}$$
$$z\to x-\mathrm{C}0t$$
$$y(z)\to AR(z)^{14}$$
$$R'(z)^2=R(z)^2\left(1-\chi R(z)^2\right)$$

Imaginary part of equation after substitutions:

$$98280a_{28}y^{(5)}(z)k^{23}-80730a_{27}y^{(5)}(z)k^{22}-65780a_{26}y^{(5)}(z)k^{21}-1184040a_{28}y^{(7)}(z)k^{21}+53130a_{25}y^{(5)}(z)k^{20}+$$
$$888030a_{27}y^{(7)}(z)k^{20}+42504a_{24}y^{(5)}(z)k^{19}+657800a_{26}y^{(7)}(z)k^{19}+6906900a_{28}y^{(9)}(z)k^{19}-33649a_{23}y^{(5)}(z)k^{18}-$$
$$480700a_{25}y^{(7)}(z)k^{18}-4686825a_{27}y^{(9)}(z)k^{18}-26334a_{22}y^{(5)}(z)k^{17}-346104a_{24}y^{(7)}(z)k^{17}-3124550a_{26}y^{(9)}(z)k^{17}-$$
$$21474180a_{28}y^{(11)}(z)k^{17}+20349a_{21}y^{(5)}(z)k^{16}+245157a_{23}y^{(7)}(z)k^{16}+2042975a_{25}y^{(9)}(z)k^{16}+13037895a_{27}y^{(11)}(z$$
$$15504a_{20}y^{(5)}(z)k^{15}+170544a_{22}y^{(7)}(z)k^{15}+1307504a_{24}y^{(9)}(z)k^{15}+7726160a_{26}y^{(11)}(z)k^{15}+37442160a_{28}y^{(13)}(z)$$
$$11628a_{19}y^{(5)}(z)k^{14}-116280a_{21}y^{(7)}(z)k^{14}-817190a_{23}y^{(9)}(z)k^{14}-4457400a_{25}y^{(11)}(z)k^{14}-20058300a_{27}y^{(13)}(z)k$$
$$8568a_{18}y^{(5)}(z)k^{13}-77520a_{20}y^{(7)}(z)k^{13}-497420a_{22}y^{(9)}(z)k^{13}-2496144a_{24}y^{(11)}(z)k^{13}-10400600a_{26}y^{(13)}(z)k^{13}-$$
$$37442160a_{28}y^{(15)}(z)k^{13}+6188a_{17}y^{(5)}(z)k^{12}+50388a_{19}y^{(7)}(z)k^{12}+293930a_{21}y^{(9)}(z)k^{12}+1352078a_{23}y^{(11)}(z)k^{12}-$$
$$5200300a_{25}y^{(13)}(z)k^{12}+17383860a_{27}y^{(15)}(z)k^{12}+4368a_{16}y^{(5)}(z)k^{11}+31824a_{18}y^{(7)}(z)k^{11}+167960a_{20}y^{(9)}(z)k^{11}-$$
$$705432a_{22}y^{(11)}(z)k^{11}+2496144a_{24}y^{(13)}(z)k^{11}+7726160a_{26}y^{(15)}(z)k^{11}+21474180a_{28}y^{(17)}(z)k^{11}-$$
$$3003a_{15}y^{(5)}(z)k^{10}-19448a_{17}y^{(7)}(z)k^{10}-92378a_{19}y^{(9)}(z)k^{10}-352716a_{21}y^{(11)}(z)k^{10}-1144066a_{23}y^{(13)}(z)k^{10}-$$
$$3268760a_{25}y^{(15)}(z)k^{10}-8436285a_{27}y^{(17)}(z)k^{10}-2002a_{14}y^{(5)}(z)k^9-11440a_{16}y^{(7)}(z)k^9-48620a_{18}y^{(9)}(z)k^9-$$
$$167960a_{20}y^{(11)}(z)k^9-497420a_{22}y^{(13)}(z)k^9-1307504a_{24}y^{(15)}(z)k^9-3124550a_{26}y^{(17)}(z)k^9-6906900a_{28}y^{(19)}(z)k$$
$$1287a_{13}y^{(5)}(z)k^8+6435a_{15}y^{(7)}(z)k^8+24310a_{17}y^{(9)}(z)k^8+75582a_{19}y^{(11)}(z)k^8+203490a_{21}y^{(13)}(z)k^8+$$
$$490314a_{23}y^{(15)}(z)k^8+1081575a_{25}y^{(17)}(z)k^8+2220075a_{27}y^{(19)}(z)k^8+792a_{12}y^{(5)}(z)k^7+3432a_{14}y^{(7)}(z)k^7+$$
$$11440a_{16}y^{(9)}(z)k^7+31824a_{18}y^{(11)}(z)k^7+77520a_{20}y^{(13)}(z)k^7+170544a_{22}y^{(15)}(z)k^7+346104a_{24}y^{(17)}(z)k^7+$$
$$657800a_{26}y^{(19)}(z)k^7+1184040a_{28}y^{(21)}(z)k^7-462a_{11}y^{(5)}(z)k^6-1716a_{13}y^{(7)}(z)k^6-5005a_{15}y^{(9)}(z)k^6-$$
$$12376a_{17}y^{(11)}(z)k^6-27132a_{19}y^{(13)}(z)k^6-54264a_{21}y^{(15)}(z)k^6-100947a_{23}y^{(17)}(z)k^6-177100a_{25}y^{(19)}(z)k^6-$$
$$296010a_{27}y^{(21)}(z)k^6-252a_{10}y^{(5)}(z)k^5-792a_{12}y^{(7)}(z)k^5-2002a_{14}y^{(9)}(z)k^5-4368a_{16}y^{(11)}(z)k^5-$$
$$8568a_{18}y^{(13)}(z)k^5-15504a_{20}y^{(15)}(z)k^5-26334a_{22}y^{(17)}(z)k^5-42504a_{24}y^{(19)}(z)k^5-65780a_{26}y^{(21)}(z)k^5-$$
$$98280a_{28}y^{(23)}(z)k^5+126a_9y^{(5)}(z)k^4+330a_{11}y^{(7)}(z)k^4+715a_{13}y^{(9)}(z)k^4+1365a_{15}y^{(11)}(z)k^4+$$

$$2380a_{17}y^{(13)}(z)k^4+3876a_{19}y^{(15)}(z)k^4+5985a_{21}y^{(17)}(z)k^4+8855a_{23}y^{(19)}(z)k^4+12650a_{25}y^{(21)}(z)k^4+$$
$$17550a_{27}y^{(23)}(z)k^4+56a_8y^{(5)}(z)k^3+120a_{10}y^{(7)}(z)k^3+220a_{12}y^{(9)}(z)k^3+364a_{14}y^{(11)}(z)k^3+560a_{16}y^{(13)}(z)k^3+$$
$$816a_{18}y^{(15)}(z)k^3+1140a_{20}y^{(17)}(z)k^3+1540a_{22}y^{(19)}(z)k^3+2024a_{24}y^{(21)}(z)k^3+2600a_{26}y^{(23)}(z)k^3+$$
$$3276a_{28}y^{(25)}(z)k^3-21a_7y^{(5)}(z)k^2-36a_9y^{(7)}(z)k^2-55a_{11}y^{(9)}(z)k^2-78a_{13}y^{(11)}(z)k^2-105a_{15}y^{(13)}(z)k^2-$$
$$136a_{17}y^{(15)}(z)k^2-171a_{19}y^{(17)}(z)k^2-210a_{21}y^{(19)}(z)k^2-253a_{23}y^{(21)}(z)k^2-300a_{25}y^{(23)}(z)k^2-$$
$$351a_{27}y^{(25)}(z)k^2-6a_6y^{(5)}(z)k-8a_8y^{(7)}(z)k-10a_{10}y^{(9)}(z)k-12a_{12}y^{(11)}(z)k-14a_{14}y^{(13)}(z)k-$$
$$16a_{16}y^{(15)}(z)k-18a_{18}y^{(17)}(z)k-20a_{20}y^{(19)}(z)k-22a_{22}y^{(21)}(z)k-24a_{24}y^{(23)}(z)k-26a_{26}y^{(25)}(z)k-$$
$$28a_{28}y^{(27)}(z)k+(a_1-\mathrm{C0}+k\,(k\,(k\,(4a_4+k\,(5a_5+k\,(k\,(k\,(8a_8+k\,(9a_9+k\,(k\,(k\,(12a_{12}+k\,(13a_{13}+k\,(k\,(k$$
$$(a_3+k\,(k\,(k\,(20a_6+k\,(35a_7+k\,(k\,(k\,(120a_{10}+k\,(165a_{11}+k\,(k\,(k\,(364a_{14}+k\,(455a_{15}+k\,(k\,(k\,(816a_{18}+k$$
$$a_5y^{(5)}(z)+a_7y^{(7)}(z)+a_9y^{(9)}(z)+a_{11}y^{(11)}(z)+a_{13}y^{(13)}(z)+a_{15}y^{(15)}(z)+a_{17}y^{(17)}(z)+a_{19}y^{(19)}(z)+$$
$$a_{21}y^{(21)}(z)+a_{23}y^{(23)}(z)+a_{25}y^{(25)}(z)+a_{27}y^{(27)}(z)=0$$

Real part of equation after substitutions:

$$20475a_{28}y^{(4)}(z)k^{24}-17550a_{27}y^{(4)}(z)k^{23}-14950a_{26}y^{(4)}(z)k^{22}-376740a_{28}y^{(6)}(z)k^{22}+12650a_{25}y^{(4)}(z)k^{21}+$$
$$296010a_{27}y^{(6)}(z)k^{21}+10626a_{24}y^{(4)}(z)k^{20}+230230a_{26}y^{(6)}(z)k^{20}+3108105a_{28}y^{(8)}(z)k^{20}-8855a_{23}y^{(4)}(z)k^{19}-$$
$$177100a_{25}y^{(6)}(z)k^{19}-2220075a_{27}y^{(8)}(z)k^{19}-7315a_{22}y^{(4)}(z)k^{18}-134596a_{24}y^{(6)}(z)k^{18}-1562275a_{26}y^{(8)}(z)k^{18}-$$
$$13123110a_{28}y^{(10)}(z)k^{18}+5985a_{21}y^{(4)}(z)k^{17}+100947a_{23}y^{(6)}(z)k^{17}+1081575a_{25}y^{(8)}(z)k^{17}+8436285a_{27}y^{(10)}(z)k$$
$$4845a_{20}y^{(4)}(z)k^{16}+74613a_{22}y^{(6)}(z)k^{16}+735471a_{24}y^{(8)}(z)k^{16}+5311735a_{26}y^{(10)}(z)k^{16}+30421755a_{28}y^{(12)}(z)k^{16}$$
$$3876a_{19}y^{(4)}(z)k^{15}-54264a_{21}y^{(6)}(z)k^{15}-490314a_{23}y^{(8)}(z)k^{15}-3268760a_{25}y^{(10)}(z)k^{15}-17383860a_{27}y^{(12)}(z)k^{15}$$
$$3060a_{18}y^{(4)}(z)k^{14}-38760a_{20}y^{(6)}(z)k^{14}-319770a_{22}y^{(8)}(z)k^{14}-1961256a_{24}y^{(10)}(z)k^{14}-9657700a_{26}y^{(12)}(z)k^{14}-$$
$$40116600a_{28}y^{(14)}(z)k^{14}+2380a_{17}y^{(4)}(z)k^{13}+27132a_{19}y^{(6)}(z)k^{13}+203490a_{21}y^{(8)}(z)k^{13}+1144066a_{23}y^{(10)}(z)k^{13}$$
$$5200300a_{25}y^{(12)}(z)k^{13}+20058300a_{27}y^{(14)}(z)k^{13}+1820a_{16}y^{(4)}(z)k^{12}+18564a_{18}y^{(6)}(z)k^{12}+125970a_{20}y^{(8)}(z)k^{12}$$
$$646646a_{22}y^{(10)}(z)k^{12}+2704156a_{24}y^{(12)}(z)k^{12}+9657700a_{26}y^{(14)}(z)k^{12}+30421755a_{28}y^{(16)}(z)k^{12}-$$
$$1365a_{15}y^{(4)}(z)k^{11}-12376a_{17}y^{(6)}(z)k^{11}-75582a_{19}y^{(8)}(z)k^{11}-352716a_{21}y^{(10)}(z)k^{11}-1352078a_{23}y^{(12)}(z)k^{11}-$$
$$4457400a_{25}y^{(14)}(z)k^{11}-13037895a_{27}y^{(16)}(z)k^{11}-1001a_{14}y^{(4)}(z)k^{10}-8008a_{16}y^{(6)}(z)k^{10}-43758a_{18}y^{(8)}(z)k^{10}-$$
$$184756a_{20}y^{(10)}(z)k^{10}-646646a_{22}y^{(12)}(z)k^{10}-1961256a_{24}y^{(14)}(z)k^{10}-5311735a_{26}y^{(16)}(z)k^{10}-$$
$$13123110a_{28}y^{(18)}(z)k^{10}+715a_{13}y^{(4)}(z)k^9+5005a_{15}y^{(6)}(z)k^9+24310a_{17}y^{(8)}(z)k^9+92378a_{19}y^{(10)}(z)k^9+$$
$$293930a_{21}y^{(12)}(z)k^9+817190a_{23}y^{(14)}(z)k^9+2042975a_{25}y^{(16)}(z)k^9+4686825a_{27}y^{(18)}(z)k^9+495a_{12}y^{(4)}(z)k^8+$$
$$3003a_{14}y^{(6)}(z)k^8+12870a_{16}y^{(8)}(z)k^8+43758a_{18}y^{(10)}(z)k^8+125970a_{20}y^{(12)}(z)k^8+319770a_{22}y^{(14)}(z)k^8+$$
$$735471a_{24}y^{(16)}(z)k^8+1562275a_{26}y^{(18)}(z)k^8+3108105a_{28}y^{(20)}(z)k^8-330a_{11}y^{(4)}(z)k^7-1716a_{13}y^{(6)}(z)k^7-$$
$$6435a_{15}y^{(8)}(z)k^7-19448a_{17}y^{(10)}(z)k^7-50388a_{19}y^{(12)}(z)k^7-116280a_{21}y^{(14)}(z)k^7-245157a_{23}y^{(16)}(z)k^7-$$
$$480700a_{25}y^{(18)}(z)k^7-888030a_{27}y^{(20)}(z)k^7-210a_{10}y^{(4)}(z)k^6-924a_{12}y^{(6)}(z)k^6-3003a_{14}y^{(8)}(z)k^6-$$
$$8008a_{16}y^{(10)}(z)k^6-18564a_{18}y^{(12)}(z)k^6-38760a_{20}y^{(14)}(z)k^6-74613a_{22}y^{(16)}(z)k^6-134596a_{24}y^{(18)}(z)k^6-$$
$$230230a_{26}y^{(20)}(z)k^6-376740a_{28}y^{(22)}(z)k^6+126a_9y^{(4)}(z)k^5+462a_{11}y^{(6)}(z)k^5+1287a_{13}y^{(8)}(z)k^5+$$
$$3003a_{15}y^{(10)}(z)k^5+6188a_{17}y^{(12)}(z)k^5+11628a_{19}y^{(14)}(z)k^5+20349a_{21}y^{(16)}(z)k^5+33649a_{23}y^{(18)}(z)k^5+$$

$53130a_{25}y^{(20)}(z)k^5 + 80730a_{27}y^{(22)}(z)k^5 + 70a_8y^{(4)}(z)k^4 + 210a_{10}y^{(6)}(z)k^4 + 495a_{12}y^{(8)}(z)k^4 +$
$1001a_{14}y^{(10)}(z)k^4+1820a_{16}y^{(12)}(z)k^4+3060a_{18}y^{(14)}(z)k^4+4845a_{20}y^{(16)}(z)k^4+7315a_{22}y^{(18)}(z)k^4+$
$10626a_{24}y^{(20)}(z)k^4 + 14950a_{26}y^{(22)}(z)k^4 + 20475a_{28}y^{(24)}(z)k^4 - 35a_7y^{(4)}(z)k^3 - 84a_9y^{(6)}(z)k^3 -$
$165a_{11}y^{(8)}(z)k^3 - 286a_{13}y^{(10)}(z)k^3 - 455a_{15}y^{(12)}(z)k^3 - 680a_{17}y^{(14)}(z)k^3 - 969a_{19}y^{(16)}(z)k^3 -$
$1330a_{21}y^{(18)}(z)k^3 - 1771a_{23}y^{(20)}(z)k^3 - 2300a_{25}y^{(22)}(z)k^3 - 2925a_{27}y^{(24)}(z)k^3 - 15a_6y^{(4)}(z)k^2 -$
$28a_8y^{(6)}(z)k^2-45a_{10}y^{(8)}(z)k^2-66a_{12}y^{(10)}(z)k^2-91a_{14}y^{(12)}(z)k^2-120a_{16}y^{(14)}(z)k^2-153a_{18}y^{(16)}(z)k^2-$
$190a_{20}y^{(18)}(z)k^2 - 231a_{22}y^{(20)}(z)k^2 - 276a_{24}y^{(22)}(z)k^2 - 325a_{26}y^{(24)}(z)k^2 - 378a_{28}y^{(26)}(z)k^2 +$
$5a_5y^{(4)}(z)k+7a_7y^{(6)}(z)k+9a_9y^{(8)}(z)k+11a_{11}y^{(10)}(z)k+13a_{13}y^{(12)}(z)k+15a_{15}y^{(14)}(z)k+17a_{17}y^{(16)}(z)k+$
$19a_{19}y^{(18)}(z)k + 21a_{21}y^{(20)}(z)k + 23a_{23}y^{(22)}(z)k + 25a_{25}y^{(24)}(z)k + 27a_{27}y^{(26)}(z)k - by(z)^3 +$
$(a_{28}k^{28} - a_{27}k^{27} - a_{26}k^{26} + a_{25}k^{25} + a_{24}k^{24} - a_{23}k^{23} - a_{22}k^{22} + a_{21}k^{21} + a_{20}k^{20} - a_{19}k^{19} - a_{18}k^{18} + a_{17}k^{17} +$
$(a_2 + k\,(3a_3 + k\,(k\,(15a_6 + k\,(21a_7 + k\,(k\,(45a_{10} + k\,(55a_{11} + k\,(k\,(91a_{14} + k\,(105a_{15} + k\,(k\,(153a$
$a_4y^{(4)}(z)+a_6y^{(6)}(z)+a_8y^{(8)}(z)+a_{10}y^{(10)}(z)+a_{12}y^{(12)}(z)+a_{14}y^{(14)}(z)+a_{16}y^{(16)}(z)+a_{18}y^{(18)}(z)+$
$a_{20}y^{(20)}(z) + a_{22}y^{(22)}(z) + a_{24}y^{(24)}(z) + a_{26}y^{(26)}(z) + a_{28}y^{(28)}(z) = 0$

Constraints on coefficients from imaginary part of equation:

$a_{27} \to 28a_{28}k$

$a_{25} \to 26a_{26}k + 6552a_{28}k^3$

$a_{23} \to 24a_{24}k + 5200a_{26}k^3 + 1572480a_{28}k^5$

$a_{21} \to 22a_{22}k + 4048a_{24}k^3 + 1052480a_{26}k^5 + 322058880a_{28}k^7$

$a_{19} \to 20a_{20}k + 3080a_{22}k^3 + 680064a_{24}k^5 + 178921600a_{26}k^7 + 54813158400a_{28}k^9$

$a_{17} \to 18a_{18}k+2280a_{20}k^3+421344a_{22}k^5+94140288a_{24}k^7+24796428800a_{26}k^9+7597393090560a_{28}k^{11}$

$a_{15} \to 16a_{16}k+1632a_{18}k^3+248064a_{20}k^5+46387968a_{22}k^7+10376351744a_{24}k^9+2733453598720a_{26}k^{11}+$
$837515820072960a_{28}k^{13}$

$a_{13} \to 14a_{14}k+1120a_{16}k^3+137088a_{18}k^5+21085440a_{20}k^7+3947525120a_{22}k^9+883115778048a_{24}k^{11}+$
$232643283353600a_{26}k^{13} + 71280785877073920a_{28}k^{15}$

$a_{11} \to 12a_{12}k+728a_{14}k^3+69888a_{16}k^5+8656128a_{18}k^7+1332930560a_{20}k^9+249576198144a_{22}k^{11}+$
$55834388004864a_{24}k^{13} + 14708733593681920a_{26}k^{15} + 4506686150828359680a_{28}k^{17}$

$a_9 \to 10a_{10}k + 440a_{12}k^3 + 32032a_{14}k^5 + 3111680a_{16}k^7 + 385848320a_{18}k^9 + 59422904320a_{20}k^{11} +$
$11126417899520a_{22}k^{13}+2489170300469248a_{24}k^{15}+655734757395660800a_{26}k^{17}+200914020585819340800a_{28}$

$a_7 \to 240a_{10}k^3+12672a_{12}k^5+933504a_{14}k^7+90787840a_{16}k^9+11259076608a_{18}k^{11}+1733987205120a_{20}k^{13}+$
$324674387017728a_{22}k^{15}+72635234665365504a_{24}k^{17}+19134668627220889600a_{26}k^{19}+5862771754821054627$
$8a_8k$

$a_5 \to 4032a_{10}k^5 + 215424a_{12}k^7 + 15887872a_{14}k^9 + 1545363456a_{16}k^{11} + 191651217408a_{18}k^{13} +$
$29515853365248a_{20}k^{15}+5526593941929984a_{22}k^{17}+1236393972835811328a_{24}k^{19}+325709541934503034880a_2$
$9979585956589344915456 0a_{28}k^{23} + 6a_6k + 112a_8k^3$

$a_3 \to 32640a_{10}k^7+1745920a_{12}k^9+128780288a_{14}k^{11}+12526223360a_{16}k^{13}+1553465966592a_{18}k^{15}+$

$239246490992640a_{20}k^{17}+44796883073761280a_{22}k^{19}+10021832059523170304a_{24}k^{21}+2640102104917816115$

$8089147691031213543260 16a_{28}k^{25} + 4a_4k + 40a_6k^3 + 896a_8k^5$

$\text{C0} \to a_1-79360a_{10}k^9-4245504a_{12}k^{11}-313155584a_{14}k^{13}-30460116992a_{16}k^{15}-3777576173568a_{18}k^{17}-$

$2a_2k - 581777702256640a_{20}k^{19} - 108932957168730112a_{22}k^{21} - 24370173276164456448a_{24}k^{23} -$

$6419958484945407574016a_{26}k^{25}-1967044844910430876860416a_{28}k^{27}-8a_4k^3-96a_6k^5-2176a_8k^7$

Constraints on coefficients from real part of equation:

$b \to \frac{5372155913332392772506888374845440000000a_{28}\chi^{14}}{A^2}$

$a_{26} \to -378a_{28}k^2 - 11116a_{28}$

$a_{24} \to 20475a_{28}k^4 + 3612700a_{28}k^2 + 56019600a_{28}$

$a_{22} \to -376740a_{28}k^6 - 166184200a_{28}k^4 - 15461409600a_{28}k^2 - 169478961600a_{28}$

$a_{20} \to 3108105a_{28}k^8+2559236680a_{28}k^6+595264269600a_{28}k^4+39149640129600a_{28}k^2+343529519773440a_{28}$

$a_{18} \to -13123110a_{28}k^{10} - 17366248900a_{28}k^8 - 7540014081600a_{28}k^6 - 1239738604104000a_{28}k^4 -$

$65270608756953600a_{28}k^2 - 493007322059965440a_{28}$

$a_{16} \to 30421755a_{28}k^{12}+59045246260a_{28}k^{10}+41200791231600a_{28}k^8+12645333761860800a_{28}k^6+$

$1664400523302316800a_{28}k^4 + 754301202751747 12320a_{28}k^2 + 5160284735572385587 20a_{28}$

$a_{14} \to -40116600a_{28}k^{14}-107354993200a_{28}k^{12}-109868776617600a_{28}k^{10}-54194287550832000a_{28}k^8-$

$1331520418641853440 0a_{28}k^6-150860240550349424640 0a_{28}k^4-619234168268686270464 00a_{28}k^2-$

$3997356628050564383539 20a_{28}$

$a_{12} \to 30421755a_{28}k^{16}+107354993200a_{28}k^{14}+151485737457600a_{28}k^{12}+109592892602793600a_{28}k^{10}+$

$4327441360586023680 0a_{28}k^8+9152187926721198428160a_{28}k^6+9391718218741741768704 00a_{28}k^4+$

$3637594531526013589020 6720a_{28}k^2 + 2300162459892920409430425 60a_{28}$

$a_{10} \to -13123110a_{28}k^{18}-59045246260a_{28}k^{16}-109868776617600a_{28}k^{14}-109592892602793600a_{28}k^{12}-$

$6346913995526168064 0a_{28}k^{10}-2157301439869996772352 0a_{28}k^8-4132356016246366378229760a_{28}k^6-$

$4001353984678614947922739 20a_{28}k^4-1518107223529327470224080896 0a_{28}k^2-9772197794946042751023577$

$a_8 \to 3108105a_{28}k^{20}+17366248900a_{28}k^{18}+41200791231600a_{28}k^{16}+54194287550832000a_{28}k^{14}+$

$4327441360586023680 0a_{28}k^{12}+2157301439869996772352 0a_{28}k^{10}+6641286454681660250726400a_{28}k^8+$

$1200406195403584484376821760a_{28}k^6+1138580417646995602668060672 00a_{28}k^4+4397489007725719237960$

$3013695553135239193606635284 0704a_{28}$

$a_6 \to -376740a_{28}k^{22} - 2559236680a_{28}k^{20} - 7540014081600a_{28}k^{18} - 12645333761860800a_{28}k^{16} -$

$1331520418641853440 0a_{28}k^{14}-9152187926721198428160a_{28}k^{12}-4132356016246366378229760a_{28}k^{10}-$

$1200406195403584484376821760a_{28}k^8-21253501129410584583137132544 0a_{28}k^6-2052161536938668977714$

$8438347548778669742098578795397 12a_{28}k^2 - 65338868717188217706370776579440 64a_{28}$

$a_4 \to 20475a_{28}k^{24}+166184200a_{28}k^{22}+595264269600a_{28}k^{20}+1239738604104000a_{28}k^{18}+16644005233023168 0$

$$150860240550349424640 0a_{28}k^{14}+939171821874174176870400a_{28}k^{12}+400135398467861494792273920a_{28}k^{10}+$$

$$113858041764699560266806067200a_{28}k^{8}+205216153693866897771495161856 00a_{28}k^{6}+21095868871946674$$

$$9800830307578232655955616486916096 0a_{28}k^{2}+940233544042248836595276196714905600a_{28}$$

$$a_2 \to -378a_{28}k^{26}-3612700a_{28}k^{24}-15461409600a_{28}k^{22}-39149640129600a_{28}k^{20}-65270608756953600a_{28}k^{18}-$$

$$754301202751747123 20a_{28}k^{16}-619234168268686270464 00a_{28}k^{14}-3637594531526013589020 6720a_{28}k^{12}-$$

$$151810722352932747022408089 60a_{28}k^{10}-439748900772571923796061061120 0a_{28}k^{8}-84383475487786697420$$

$$9800830307578232655955616486916096 0a_{28}k^{4}-56414012642534930195716571802894336 00a_{28}k^{2}-$$

$$8028217395750781031124979591151616 0000a_{28}$$

$$\omega \to -a_1k-27a_{28}k^{28}-277900a_{28}k^{26}-1288450800a_{28}k^{24}-3559058193600a_{28}k^{22}-6527060875695360a_{28}k^{20}-$$

$$8381124475019412480a_{28}k^{18}-7740427103358578380800a_{28}k^{16}-5196563616465733698600960a_{28}k^{14}-$$

$$2530178705882212450373468160a_{28}k^{12}-879497801545143847592122122240a_{28}k^{10}-2109586887194667435520$$

$$3266943435859410885318538828972032 0a_{28}k^{6}-2820700632126746509785828590144716800a_{28}k^{4}-$$

$$8028217395750781031124979591151616 0000a_{28}k^{2}+3064955119562036944525570043019264000000a_{28}$$

y(z) - function:

$$\frac{268435456a^{14}A}{(4a^2e^z+\chi e^{-z})^{14}}$$

u(x, t) - function:

$$\frac{268435456a^{14}Ae^{i(kx-\omega t)}}{(4a^2e^{\mathrm{C0}t+x}+\chi e^{-\mathrm{C0}t-x})^{14}}$$